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Humerus shaft

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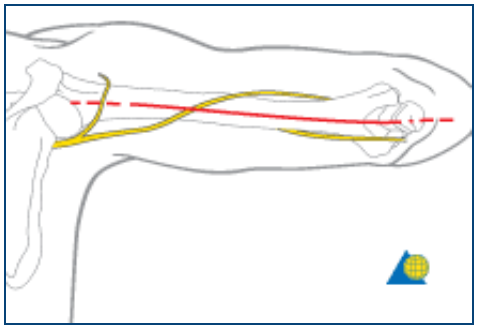
Posterior approach to the humerus (after Henry)

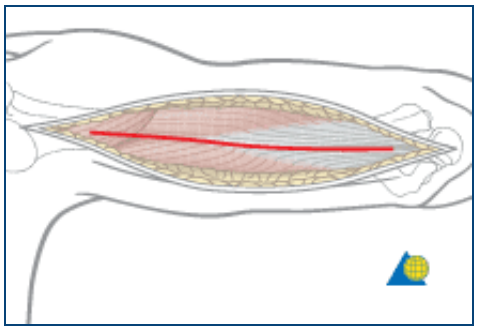


Skin incision

The complete incision is illustrated. Depending on the fracture and its location a smaller section might be used.

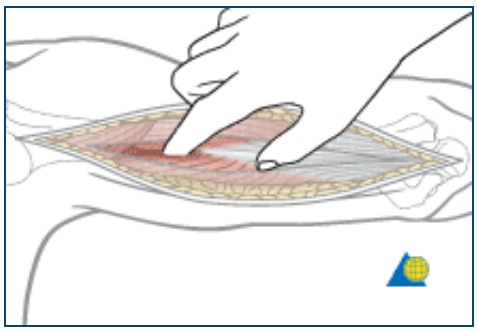
Incise the skin, beginning at the tip of the olecranon.

The incision runs proximally in a straight line along the posterior midline of the arm. It crosses the radial nerve in the mid-humeral region and the axillary nerve proximally.

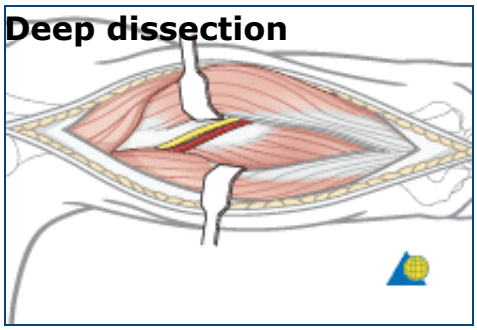


Superficial dissection

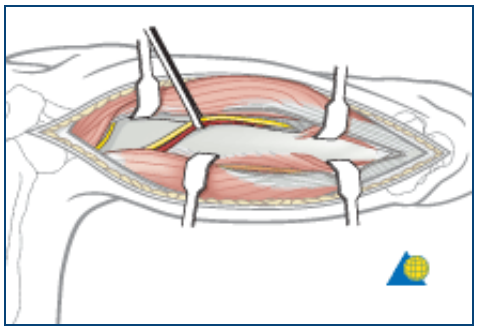
Incise the deep fascia in line with the skin incision.



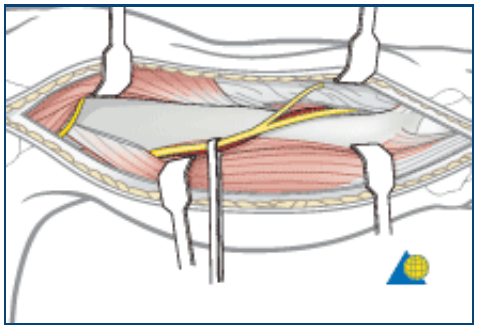
By palpation with a finger, identify the interval between the lateral and long heads of the triceps. The opening of this interval will be developed from proximal to distal, remembering that the radial nerve lies beneath the triceps as it crosses the humerus.



Then develop the proximal interval between the two heads by blunt dissection, retracting the lateral head laterally and the long head medially.
Within the spiral groove, identify the radial nerve and the accompanying profunda brachii artery.
Distally, split the common triceps tendon, along the line of the skin incision, by sharp dissection.



Release the medial head of triceps from the humerus proximally, and incise it distally, in line with the humeral shaft. Release the muscle from the bone only as much as needed, and protect the ulnar nerve medially. The ulnar nerve is constrained at the point where it passes distally through the medial intermuscular septum, from the anterior to the posterior compartment of the arm.
Release the medial head of the triceps proximally until the axillary nerve is found.
Now the posterior humerus, crossed by radial nerve and its accompanying vessels, lies exposed from the axillary nerve and posterior circumflex humeral artery proximally to the capitellum distally.



Extending the approach

Distal extension

Splitting the triceps tendon limits distal exposure, which can be improved by approaching the humerus

from the lateral side of this muscle. See below.

Proximal extension

Limited proximal extension, even beyond the axillary nerve, is possible with careful mobilization and retraction of both radial and axillary nerves and their accompanying vessels.

The most extensive posterior access to the humerus is achieved by retracting the entire triceps medially (after Gerwin M, et al. (1996) Alternative operative exposures... JBJS 78(11):1690-5). This exposes the lower lateral brachial cutaneous nerve on the posterior surface of the lateral intermuscular septum. Follow this nerve proximally to find the main radial nerve, of which it is a branch. The septum is incised over the radial nerve to allow its mobilization. Lateral and medial heads of the triceps are elevated from the periosteum, from lateral to medial. The lateral extensor retinaculum is divided distally to provide access to the posterior capitellum. This exposes the entire posterolateral humeral shaft from the axillary nerve distally.

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