Bony landmarks and topography of the femoral insertion of the anterior cruciate ligament: An anatomical study
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Most of us are familiar with popular landmarks used as a guide in the reconstruction of the anterior cruciate ligament. The o’clock position and Clancy’s ‘resident ridge’ are a few common examples. These are often crude methods in an attempt to get a reliable and repeatable anatomical reconstruction of the anterior cruciate ligament. Fu and his co-workers in Pittsburgh, armed with this study, to identify bony landmarks on the femoral insertion area that would contribute to our understanding of the insertion and thus assist us with a more reliable anatomical reconstruction of the anterior cruciate ligament. The secondary aim of their study was to quantitatively analyse the surface area of the femoral footprint. The latter information is particularly important in double bundle surgery. In other words the footprint surface area needs to be big enough to accommodate two tunnels for two bundles.

In the study they identified two specific bony landmarks:
- The ‘lateral intercondylar ridge’. This is a bony ridge that runs through the entire anterior cruciate ligament femoral insertion site, from proximal to distal. It is not situated in the roof of the notch but more inferior in the flexed knee. The entire anterior cruciate takes its origin posterior of this ridge.
- The ‘lateral bifurcate ridge’. This is a bony ridge found between the femoral insertions of the posterolateral and anteromedial bundles of the anterior cruciate ligament. It runs from anterior to posterior in the anatomic knee. The insertion areas of the entire anterior cruciate, antero-medial and posterolateral bundles were 196.8 mm², 120 mm² and 76.8 mm² respectively.

Their recommendations are that a single bundle should be placed posterior to the ‘lateral intercondylar ridge’ and with a double bundle technique, the posterolateral bundle should be placed distally and the anteromedial bundle proximal to the ‘lateral bifurcate ridge’.

In my opinion the article has the following valuable lessons:
- If one uses bony landmarks to guide your tunnel placement in anterior cruciate reconstructions, you can assure a more reliable and repeatable placement. It is obviously more accurate than relying on soft tissue or imaginary landmarks.
- The tibial and femoral tunnels should not be co-dependent on each other. Most surgeons still use a trans-tibial approach to place their femoral tunnels. The femoral insertion site described by Fu et al is difficult, if not impossible to reach through a trans-tibial approach. The implication is that a medial or an accessory medial portal is needed for an anatomic placement of the femoral tunnel.

In summary, I believe this is a good guide for an anatomic approach to anterior cruciate ligament reconstruction. Double bundle surgery might not be for everyone, but the minimum one should aim for is an anatomically reconstructed anterior cruciate ligament, be it single or double bundle.

Delayed internal fixation of femoral shaft fracture reduces mortality among patients with multisystem trauma
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The management of long bone fractures in poly-trauma patients is not controversial. The timing of this management, however, is controversial and this has been the subject of numerous articles, editorials and conference papers in recent years.

Nobody would argue that definitive fracture fixation is beneficial to the polytrauma patient. Timing this fixation seems to be the key to good outcomes in these patients. It does seem that performing damage control orthopaedics in the more severely injured group of patients may decrease ARDS and increase survival rates. The reasons for this revolve around the pro-inflammatory nature of definitive long-bone fixation (nailing or plating) and the ‘second hit’ effect this has on the already compromised host.

This is a large observational study reported from California, where a large cohort of severely injured patients (ISS > 15) with concomitant femur fractures were studied and reported upon. More than 3 000 patients were included in the group. The group was divided into sub-groups depending on the timing of the definitive fracture fixation. Mortality was compared across the subgroups and also compared across injury patterns and other confounding factors.

The result was clear: The patients who received definitive treatment for their femur fractures at a later stage (after 12 hours) had significantly lower mortality rates. This benefit was even more pronounced in the group of patients who had significant abdominal trauma.

The reason for this is probably that the severely injured patient is probably still poorly resuscitated or recovering physiologically from the shock state during the first 12 hours post-injury and is thus very vulnerable to the second hit phenomenon.

This study clearly supports the new trend toward damage control orthopaedics in the setting of long bone fractures in conjunction with severe other injuries (ISS > 15).

This is the largest series to date with mortality as the end-point and seems to be a very relevant article in this field.