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TECHNICAL NOTE

Experience of the T2 supracondylar nail in distal femoral fractures

A. Ghandour *, T.D.A. Cosker, S.S. Kadambande, I. Pallister, I.D. Russell

Department of Trauma and Orthopaedics, Morriston Hospital, Swansea, United Kingdom

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Background

Supracondylar and intercondylar fractures of the distal femur occur either as insufficiency fractures in the elderly or following high-energy trauma in younger patients.[2,11]

These fractures comprise 4—7% of all femoral fractures and have always represented challenging fractures to treat.[7] Many methods of fixation have been used with reportedly good results.[1,3,8,9]

Schatzker and Lambert[10] concluded that the elderly patient with an osteoporotic comminuted fracture presents a significant surgical challenge which may be difficult to overcome and in some cases be beyond the surgeon's capability.

We report our experience with the T2 retrograde supracondylar nail (T2SCN Stryker, UK) which has the new feature of four distal locking screws in three different planes.

Patients and materials

Between August 2003 and September 2004, the authors used the new nail, shown in Fig. 1a and b (Stryker Orthopaedics). The nail has four distal locking screws, two of which lie at 45° to the coronal plane and two of which lie parallel. These are condylar screws which are designed to achieve inter-condylar compression, even in osteoportic fractures. The distal screw is 6 mm from the tip of the nail and can be locked into the nail using an end cap. This provides a degree of angular stability for distal fixation. The most proximal of the distal screws is 32 mm from the nail end (Fig. 2).

There were 23 procedures in 21 patients (7 males). The mean age was 63 years (range 22—90 years). Fractures were classified at admission according to the international AO classification of distal femoral fractures (Table 1).

All procedures were carried out by the senior authors with the assistance of the trauma team which included the junior authors.

Surgical technique

Patients were identified having presented with distal femoral fractures to our trauma unit. All cases were performed in a dedicated trauma theatre (with laminar flow) under image intensifier guidance with a radiolucent trauma table. All surgery was performed in a supine position with antibiotic prophylaxis. A tourniquet was not routinely used. A

* Correspondence to: 32 Heol y Felin, Rhiwbina, Cardiff CF14 6NT, United Kingdom. Tel.: +44 79611 97785.
E-mail address: adel@oghandour.fsnet.co.uk (A. Ghandour).

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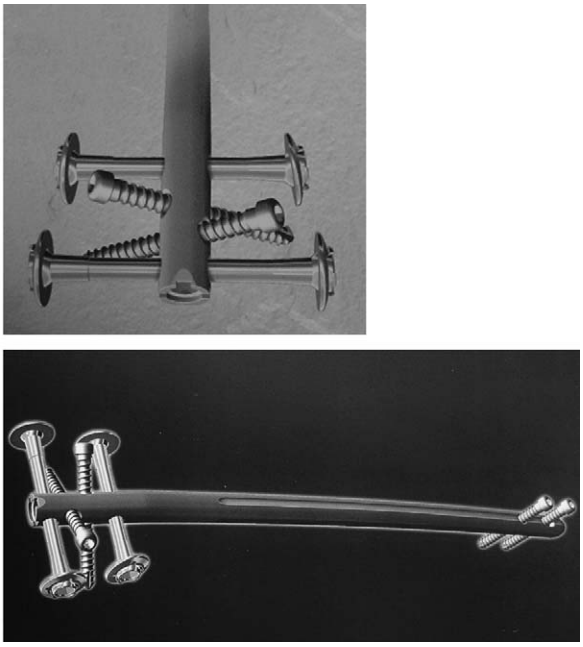

Figure 1 The T2SCN (the T2 supracondylar nail).

rolled pillow was placed underneath the thigh. The limb was prepared and draped using a large U-sheet secured above the hip to allow access to the subtrochanteric region. The foot and leg are then draped to the proximal tibia to allow manual in-line traction to be applied to aid reduction.

Table 1 AO classification of the fractures

33A	4
33C1	2
33C2	12
33C3	5

A medial parapatellar arthrotomy was used. The femoral condylar fragments were reduced and held with reduction forceps to attain a sound anatomical reduction. The entry point for the nail was identified, being determined by the varus/valgus angulation in relation to the proximal fragment. Insertion of a long, olive tipped guide wire follows distal entry point reaming.

Serial, sequential reamings (in stages of 0.5 cm increments) were performed in order to reach a canal size of 12 mm. The length of the nail was determined so as to reach the level of the lesser trochanter except in one case where the patient had a total hip replacement on the ipsilateral side, where the nail was inserted to within 8 cm of the tip of the prosthesis (Fig. 3).

The distal locking screws were positioned using the jig after rotational alignment was verified.

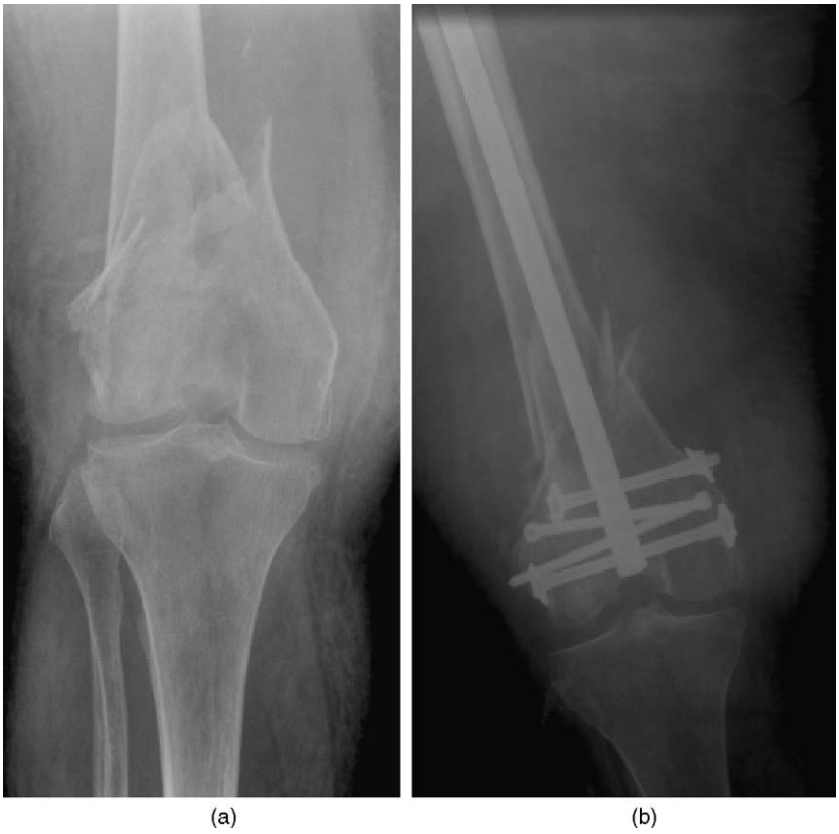

Figure 2 (a and b) Radiographs of a type 33C2 osteoportic fracture fixed with the two condylar and two diagonal screws.