Salvage procedure for cut-through after surgical fixation of trochanteric fractures with TFN

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Purpose

Closed reduction and fixation using a cephalomedullary nail (CMN) represents the accepted management of unstable intertrochanteric fractures [1]. Cut-through have been described as a complication associated to the treatment. Although a hip arthroplasty may be the most predictable revision method, a non prosthetic option can lead to similar results [2,3].

The objective is to describe a non prosthetic revision procedure in cases of cut-through.

Method

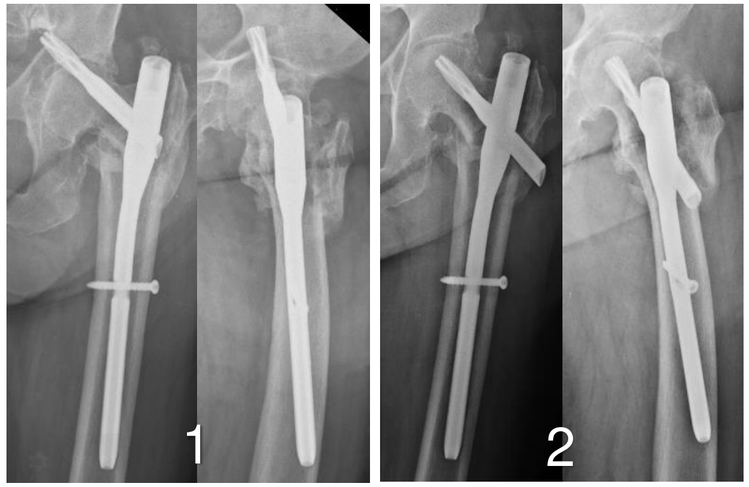
We performed a retrospective analysis of our Institutional Registry for Hip Fractures in elderly patients (RIAFC) from January 2000 to June 2017 searching for cut-through as a failure after unstable intertrochanteric fracture treatment.

Age, gender, fractures pattern, fracture reduction (Tip to Apex score/Garden’s Angle/Cleveland classification), surgical blood loss, fracture healing during the last follow-up visit were analyzed [4].

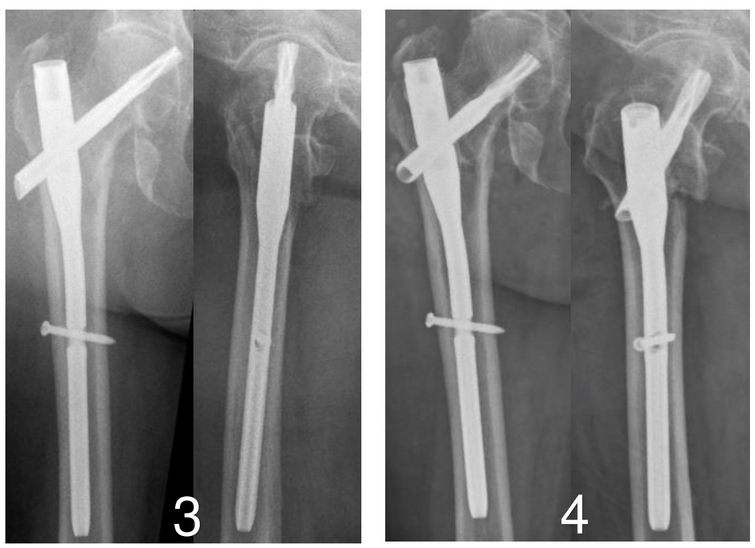
Revision procedure:

A- Helical blade removal, introduction of structural bone graft (autologous or allograft) as a plug to obliterate the communication to the joint and a new blade insertion (Figures 1-2).

B- Same as in A but augmenting the blade/head purchase with Polymethyl methacrylate (PMMA). Before the cement insertion, a radio opaque solution was instilled to assure lack of joint leakage (Figures 3-4)



Figures 1 and 2. Revision procedure A. Fig. 1 preoperative X-ray, AP and L of cut-thorugh. Fig. 2: Post op. Revision surgery X-rays AP and L.



Figures 3 and 4. Revision procedure B. Fig. 1 preoperative X-ray, AP and L of cut-thorugh. Fig. 2: Post op. Revision surgery X-rays AP and L.

Results

We evaluated 1616 patients. Sixteen of them presented a cut-through complication (1 %). Ten of them were females with an average age for all of 84 years. In 14 cases the fracture were 31A2 and in 2, 31A3. Reduction: 6 patients had a Garden’s angle associated to a bad reduction. Four patients had their blades inserted in a dangerous zone according to Cleveland’s. Blood loss had an average of 3.6 points of hematocrit declination.

One patient denied an implant revision and opted for a total joint replacement. In four of the patients the procedure A was done, 2 of them had a new failure and a joint arthroplasty was performed. In the B group, only one patient needed a revision to a total hip. The other 10 patients healed uneventfully and did not need any further intervention (Figure 5).

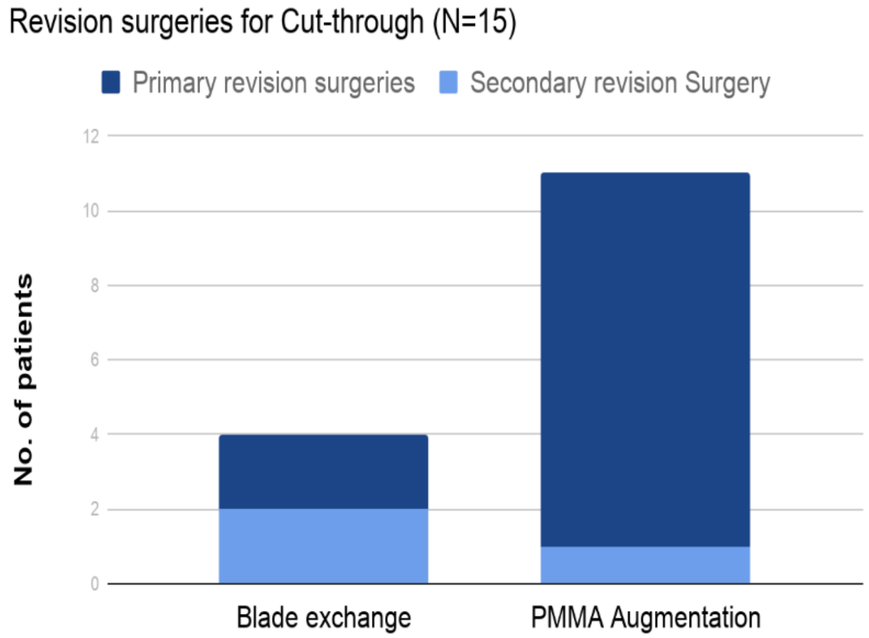


Figure 5

Conclusion

Cut-through revision after fixation of unstable intertrochanteric fractures treated with CMN by blocking of the joint communication and augmenting the head blade purchase with PMMA is a safe and minimal invasive procedure. Generates low blood loss and rate of complications and allows bone healing preserving the native joint.

References

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