

Fitbone™

Intramedullary Lengthening System

Antegrade femur lengthening Prof. Franck Accadbled

1. CASE PRESENTATION



Preoperative situation - Proximal non-union at age 11.



Revision with repeat bone grafting and plate fixation.



Valgus deformity and 6.6cm shortening when 14 years old. No further growth was expected at the distal femur due to primary tumor excision.



Condition:

The boy developed an osteosarcoma on the left distal femur at the age of 9.

Patient History:

- Surgical excision sparing the knee joint left a bone defect of half of the femur in length
- Initial reconstruction was done according to the induced membrane technique
- Proximal non-union was managed with repeat bone grafting and plating
- The patient was referred at the age of 14. He was presented with a 6.6cm limb length discrepancy (LLD) and an 8 degree valgus

2. TREATMENT STRATEGY



Antegrade Fitbone™ TAA1180 with 2 blocking screws to achieve desired correction according to Reverse Planning Method. Immediate postoperative view.



End of distraction 12/52 post-operative displaying 8 cm gain and callus formation.

Antegrade Fitbone™ TAA1180 was used after careful pre-operative planning according to Baumgart's Reverse Planning Method. 2 blocking screws were necessary to achieve perfect alignment. Proximal reaming was performed with straight reamers up to 12.5mm through the dedicated tube system. Percutaneous osteotomy was performed 2cm below the lesser trochanter. The proximal segment was protected from overreaming and ovalization by a long tube, and the distal segment was reamed up to 11.5mm. Proximal locking was done with the targeting jigs and distal locking by hand via fluoroscopy. Associated valgus of the tibia was concomitantly treated with an 8 plate. Post-operative phase was uneventful and the patient was discharged from hospital on the third day. Distraction by the patient was started on the 3rd post-operative day at the daily rate of 1mm. 8cm lengthening was achieved to compensate current LLD and also anticipate further growth from the contralateral side. Healing index was 29 days/cm. Full weight bearing was possible after 3 months.

3. FOLLOW UP



Latest follow up 1 year after removal of the Fitbone™ TAA1180. Equally long and aligned limbs. Knees not leveled because of left tibia overgrowth of 2 cm of un-known origin.

The implant was removed 18 months after surgery. Residual LLD was 3 mm. At the last follow-up 4 years after the surgery the patient showed full-range knee motion; the patient was successfully involved in sports activities.

4. SURGEON'S COMMENTS

"I went antegrade as the osteotomy had to be done proximally because I did not want to involve a segment which had already been grafted."



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The case report shows an individual's response to treatment. The information contained in this case report is provided for informational and educational purposes. It is not intended to guarantee the response other people may have to treatment as individual results can and do vary. Proper surgical procedure is the responsibility of the medical professional. Each surgeon must evaluate the appropriateness of a technique based on his or her personal medical credentials and experience.

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