

CASE REPORTS

Antibiotic courses have varied from two to six weeks with suitable parenteral/oral combinations. The total period of therapy depends on the sensitivity of the isolated pathogen to the prescribed antibiotic and the specificity of the antibiotic. If a surgical debridement has been performed, a shorter regime of antibiotic therapy would suffice in contrast to only an aspiration where a longer regime would be necessary to ensure eradication of the infection.

Prognosis was poor in the pre-antibiotic era. It is excellent in the present times for cases diagnosed and

treated. Late sequelae are unusual. Ankylosis, even when it occurs, is asymptomatic.

Septic arthritis due to *N. gonorrhoeae* is common. Acute sacro-iliitis caused by this organism has not been described before perhaps because of difficulty in isolating the bacterium. With rising incidence of gonococcal S.T.D., surgeons treating acute infective sacro-iliitis should be aware of the possibility and perhaps include cultures for this organism in the diagnostic work-up.

References

1. Delbarre F, Rondier J, Delrieu F, Evrard J, Cayla J, Menkes CJ *et al* - Pyogenic infection of the sacro-iliac joint - report of thirteen cases. *J Bone Joint Surg* 1975;57-A : 819-25.
2. Dunn EJ, Bryan DM, Nugent JT, Robinson RA. Pyogenic infections of the sacro-iliac joint. *Clin Ortho* 1976;118 : 113-7.
3. Miskiew DB, Block RA, Witt PF. Aspiration of infected sacro-iliac joints. *J Bone Joint Surg* 1979;61-A : 1071-2.

Knee Arthrodesis with Interlocking Nail after Excision of Giant Cell Tumour of the Distal Femur

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Summary

Giant cell tumour of bone occurring around the knee is fairly common and can be difficult to manage. We report a case of such tumour involving the distal femur which was successfully treated with complete excision followed by arthrodesis of the knee with a long interlocking intramedullary nail.

Key Words: Giant cell tumour, Knee arthrodesis, Interlocking nail

Introduction

Giant cell tumour of bone is a unique primary bone tumour. It is usually locally invasive but seldom metastasizes. Surgical excision is the main mode of treatment. Local recurrence occurs if the primary tumour is incompletely excised. Giant cell tumour located around the knee is fairly common and can be a challenge to the orthopaedic surgeon. We report a case of such tumour involving the distal femur which was successfully excised and followed by knee arthrodesis with a long interlocking nail.

Case Report

A 32-year-old Malay man was seen in Hospital Kuala Lumpur in August 1990. He was initially treated in another hospital when he sustained pathological fracture of his distal right femur. He was managed with traction for 6 weeks before referral. When he was referred, his right lower limb was wasted and the distal femur was swollen. The knee was held in 30 degrees flexion. His right knee was stiff with only 30 to 60 degrees of flexion. The initial plain radiographs confirmed the pathological fracture over the distal right femur. There was an expansile lytic lesion occupying the distal metaphyseal region of the right femur. Radiographs 6 weeks following traction showed evidence of union at the fracture site (Figure 1). He was subsequently admitted and several investigations were carried out. The blood investigations including haemoglobin, calcium, alkaline phosphatase and E.S.R. were within normal limits. Bone scan showed increased tracer uptake in the lesion with physiological distribution in the other areas. Computed tomography showed an expansile tumour occupying the distal right femur. It had broken the cortex and extended outwards into the suprapatellar region. Angiogram revealed a vascular tumour supplied by an enlarged lateral genicular branch of the right popliteal artery.

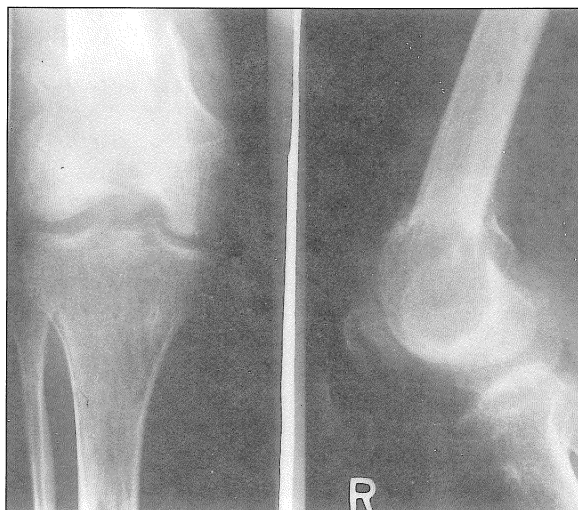


Fig. 1: Plain radiograph 6 weeks following pathological fracture of distal femur

Biopsy confirmed a giant cell tumour of the distal femur. A 72cm by 12mm interlocking nail was subsequently ordered. Resection of the distal femur followed by arthrodesis was performed as described by Campanacci *et al*¹. The only modification was that an intramedullary interlocking nail was used in this patient. The bone was osteoporotic as a result of prolonged immobilisation and cerclage wires were used to secure the bone grafts instead of screws. Hemicylindrical autogenous bone grafts were harvested from the anterior half of the tibia and from the remaining diaphysis of the resected femur. Post-surgery, three Redivac drains were inserted. However in the recovery room, there was excessive drainage and blood pressure became unrecordable. He was immediately resuscitated and all the drains were clamped, compression dressing applied and leg elevated. The clamps were released 3 hours later when the patient was stabilised. The subsequent recovery was uneventful.

and he was discharged 2 weeks after the surgery. He was allowed partial weight bearing after 5 months and full weight bearing after 9 months when the fusion was complete. There was 5 cm shortening of his right lower limb. There was subsequent backing out of the distal locking screws which required removal. He remained well 3 1/2 years after the surgery with no evidence of recurrence (Fig. 2).

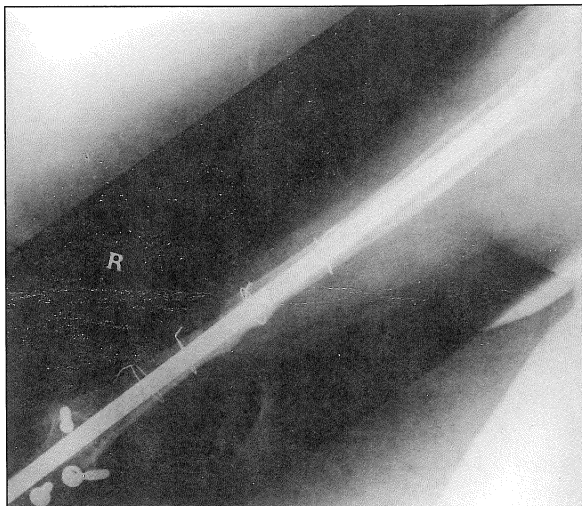


Fig. 2: 3 1/2 years following surgery with no evidence of local recurrence

Discussion

Three stages of giant cell tumour have been classified by Enneking². Stage 1 lesions are confined totally within bone, though the cortex may be thinned. Stage 2 lesions have progressive thinning and bulging of the cortex and Stage 3 lesions have broken through the cortex with an associated soft tissue component (as in this patient).

Stage 3 giant cell tumour requires wide surgical excision as the initial procedure to prevent recurrence².

When such tumour occurs at the end of a major joint, several methods of reconstruction can be considered. Osteochondral allograft with appropriate cryopreservation of the cartilage had been successfully utilised³. Custom-made endoprosthesis replacement is an infrequent but alternative method to replace a large osteoarticular bone defect. However, it must be remembered that the long term problems of loosening and mechanical failure may necessitate revisional surgery. Amputation has to be considered if the tumour cannot be completely excised and reconstruction not feasible.

Total resection of distal femur followed by arthodesis with autogenous bone grafts stabilised with a long unlocked intramedullary nail has been described¹. However with the introduction of long intramedullary interlocking nails, such procedures can be more effectively carried out. An interlocking nail provides enough axial and rotational stability for fusion to occur. It is especially useful when the bone involved is osteoporotic (as in this patient) such that adequate screws fixation of the autografts cannot be accomplished. In such instances, cerclage wire fixation of the autografts around the locked nail may be adequate.

Excessive bleeding post-surgery is a problem in such an extensive procedure. This is aggravated by the reaming of both the femur and tibia to accommodate the locking nail. Besides blood transfusion and other measures, temporary clamping of the drains for several hours can achieve enough tamponade effect to decrease blood loss. Another major complication is infection¹.

Acknowledgement

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References

1. Campanacci M, Costa P. Total resection of distal femur or proximal tibia for bone tumours. *J Bone Joint Surg* 1979;61 : 455-63.
2. Enneking WF. *Musculoskeletal Tumour Surgery* Vol 2. New York: Churchill Livingstone, 1983 : 1435-68.
3. Mankin HJ, Doppelt S, Tomford W. Clinical experience with Allograft Implantation *Clin Orthop*. 1983;174 : 69-86.