



A RARE CASE OF FRACTURE PERIPROSTHETIC SHAFT FEMUR LEFT SIDE OPERATED WITH HOOK PLATE AND CABLES

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ABSTRACT

The overall incidence of different types of periprosthetic fractures is on rise mainly due to increasing number of primary joint arthroplasties and revision arthroplasties. Both increasing implantation numbers of total hip replacements and demographic change with higher populations of older people, indicate that there will be an increase in periprosthetic fractures in near future. We present our experience in a case of post traumatic periprosthetic Vancouver type B fracture after hemiarthroplasty treated with Hook plate and Cables.

KEYWORDS : Periprosthetic, Vancouver, Hemiarthroplasty, Total hip arthroplasty, Epidemiology.

INTRODUCTION

Arthroplasties are one of the most common and successful surgeries worldwide. This has given rise to increase in number of Periprosthetic fractures. Periprosthetic fractures of femur are often associated with high levels of morbidity and are challenging for the treating surgeon as well. Some common causes of these injuries are trauma, poor positioning of implants and some patient specific factors. Commonly used classification system for these types of fractures is **VANCOUVER CLASSIFICATION**.

The economic burden on healthcare systems due to these injuries is also significant. Respect for soft tissue, fundamentals of fractures management, composite implant solutions along with appropriate achievement of length, rotation and alignment is necessary for optimal management of the complex injuries.

Type	Subtype	Fracture description	Treatment
Type A		Fracture in trochanteric region	
	AG	Fractures of the greater trochanter	Conservative or cable wires
	AL	Fractures of the lesser trochanter	Conservative or cable wires
Type B		Fracture around stem or just below it	
	B1	Well-fixed stem	ORIF
	B2	Loose stem with good proximal bone stock	Revision THR
	B3	Loose stem with poor-quality bone stock	Revision THR
Type C		Fracture occurring well below the tip of the stem	ORIF

ORIF: open reduction and internal fixation; THR: total hip replacement.

Figure 1- Vancouver Classification Case Presentation

A 75-year-old male, presented to us with history of trauma (fall at night in house) to left hip following fall at night in house. At presentation, he did not suffer from any other injuries and was hemodynamically stable.



Figure 2- Periprosthetic Femur Fracture Proximal

Patient was an operated case of same side cemented bipolar hemiarthroplasty 4 years ago in another hospital in view of intracapsular neck femur fracture. Patient comorbidities included Diabetes type 2 and Hypertension and was on medication for sugar control and hypertension for 3-4 years, patient was chronic alcoholic.

Evaluation

Radiographs involving anteroposterior view of pelvis with both hips and orthogonal view of affected hip was taken and they showed periprosthetic Vancouver type B fracture closed. Signs of infection were ruled out.



Figure 3- Holding The Fractured Bone Intraop Management

A detailed staged procedure was planned following pre anesthetic checkup. Using the Direct lateral approach, incision was given over Greater trochanter distally on thigh and fracture site, soft tissues were separated, fracture site reached, reduction was done under C-arm of long spiral fracture with a butterfly fragment at the back. A 12-hole periprosthetic hook plate introduced and fixed using locking and cortical screws and cables, closure was given under layers and suturing was done. Post operatively, the patient was stable with no distal neurovascular deficit and no limb length discrepancy. Patient has excellent functional outcome post operatively. Post op period were uneventful, prior to pain, patient was walking and mobilizing very well.

DISCUSSION

Periprosthetic femur fractures following arthroplasties are challenging scenarios. Various factors such as the patient specific characteristics, the appropriate fixation methods, the decision making and planning of the surgical management (fracture classification, the stability of existing prosthesis, the existing bone stock), configuration of the construct play a crucial role in their management. In spite of various algorithms and classification available regarding

managements of these injuries, it is necessary for the treating surgeons to understand that the treatment of periprosthetic fractures needs to be individualized optimal for that particular patient. Conservative management of periprosthetic femur fractures has been associated with poor outcomes in the form of nonunion, delayed union, complications of prolonged immobilization, and malunions leading to increased morbidity and mortality.

Amongst the Vancouver subtypes for periprosthetic fractures, type B specifically represent challenging conditions determining whether (1) loose existing prosthesis (B2 sub-type) or not (B1 sub-type); (2) compromised existing bone stock (B3 sub-type), which demand more advanced techniques in revision arthroplasty. The management is targeted in order to achieve normal mechanical and anatomical alignment of the affected limb, providing a stable implant with maintaining bone stock. Leading to early fracture union providing the patient with early post operative rehabilitation and return of activities of daily living as soon as possible. The results of our study were similar to other studies with good functional outcome.

bipolar hemiarthroplasty, fixation using hook plate and cables. However, long term and multicentric studies are required for further information pertaining to such scenarios.

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Figure 4- Different Sizes Hook Plates

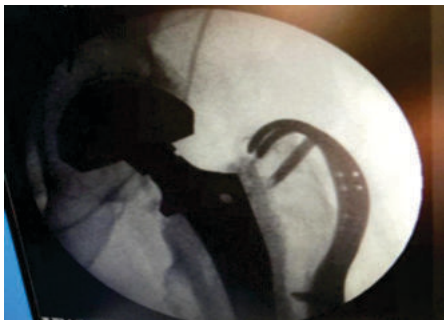


Figure 5- C Arm Intraop Photo



Figure 6- Post Op X Ray

CONCLUSION

Periprosthetic femur fractures are complex Orthopedic pathologies and require an intricate knowledge and skill of trauma as well as arthroplasty in order to provide optimal care for the patient and ensure satisfactory functional outcome. In our experience, we were able to achieve good results in periprosthetic proximal femur fracture Vancouver type B after