

Prosthetic Replacement For Femoral Neck Fractures

A. K. Banskota*

ABSTRACT:

Prosthetic replacement of the femoral head was performed in series of five selected patients at Shanta Bhawan Hospital, Kathmandu. Although prosthetic replacement surgery is common place in most parts of the globe, this was the first time we had undertaken this type of treatment at our hospital. We used the fenestrated stem Austin Moore prosthesis in all our patients. Bone cement (methyl-methacrylate) is not readily available to us at the present and we have not yet used prosthesis with cement at our hospital. One of our patients expired in the immediate post operative period. The remaining four patients were rapidly rehabilitated and left hospital on their feet after an average in-hospital stay of about three weeks.

Although it is too early right now to draw conclusions, we feel that given the selected patient, there are definite indications for this type of procedure even in the Nepalese socio-economic context.

TABLE I.

Case	Age	Sex	Side	Associated conditions
1	65	M	(R)	ASHD, Diabetes mellitus.
2	63	M	(R)	—
3	65	M	(R)	—
4	72	F	(R)	Doudenal ulcer disease.
5	70	M	(R)	

*M.D., A.B.Orth. (U.S.A.)

Orthopaedic Surgeon,
Shanta Bhawan Hospital, Kathmandu.

Illustrative Case Report (Case No. 1):

A 65 years old male was admitted to the hospital with the history of a fall at home two days prior to admission. He had pain and loss of function of the (R) lower extremity. Clinical and radiographic examination revealed a displaced femoral neck fracture of the (R) hip. The patient also had atherosclerotic heart disease with mild congestive heart failure and mild maturity onset diabetes mellitus. A medical consultation was requested and the patient placed on de-congestive therapy and the diabetes brought under control. On the fourth post admission day, replacement of the femoral head with a standard Austin Moore prosthesis was performed through a posterior (Moore) approach. One unit of blood was transfused intra-operatively.

The post operative management consisted of bed rest in skin traction with an Abduction pillow splint in between the thighs to prevent adduction and internal rotation which predispose to dislocation when the operation is done through the posterior approach. As soon as the pain of surgery abated (usually 5-7 days), the patients were gotten out of bed and a program of ambulation training started under the supervision of a physiotherapist. No weight bearing on the operated hip was allowed initially. Quadriceps training and gentle hip and enee range of motion exercises were also started and progressed daily. Full, unrestricted weight bearing was allowed after four weeks.

Prophylactic antibiotics were used routinely in all patients, starting pre-operatively on the night before surgery and continuing for a total of four weeks. Aspirin was used for purposes of anticoagulation. Elastic stockings along with ankle exercises were used to prevent deep vein thrombosis in the lower extremities.

Results:

No patient developed an early post-operative wound infection although our longest follow-up is only 3 months old. Longterm follow-up will be necessary to study this important aspect of implant surgery. One patient (Case No. 4) expired on the seventh post-operative day from fulminant pneumonia. Hip stiffness was the commonest complaint in our four living patients, although this complaint was not disabling in any one. Knee motion rapidly returned to normal. One patient (case No. 5) was sitting cross-legged in the bed by the 10th post-operative day-to the fright of the surgeon ! All four patients are now fully ambulatory and rapidly getting back to their pre-injury activity status.

Discussion:

Orthopedic surgeons often face a difficult decision when treating femoral neck fractures. A wide variety of internal fixation devices have been devised, but the end results using various techniques of fixation have been variable. The Smith Petersen Nail which is more readily available to us than other better, newer devices, has been shown to be the least effective form of internal fixation in displaced femoral neck fractures. In Nepal, the fracture Surgeon often has very little choice of what implant he will use. There is a continuous dilemma of improvisation.

Good anatomical reduction and secure fixation are important prerequisites for fracture union and reduced incidence of late aseptic necrosis and collapse of the femoral head. The reported incidence of these complications is quite variable from one report to another.

TABLE 2.

<u>Authors</u>	<u>Non union (percent)</u>	<u>Aseptic necrosis (percent)</u>
Banks (1962)	28	33
Boyd & Salvatore (1964)	12	35
Deyerle (1966)	0	6
Graham (1968)	23	28
Garden (1971)	26	21
Massie (1973)	21	33
Fielding & Associates (1974)	10	16
Johnson & Crothers (1975)	16	27

Accurate reduction and stable fixation is an elusive goal without reliable operative X-ray control facilities. We often have to reluctantly increase capsular dissection to "visualize" a fracture for lack of convincing X ray reduction. This drastic step must often fatally compromise a delicate vascular situation.

The controversy over internal fixation versus prosthetic replacement in femoral neck fractures is a long dedated one. Even when reduction is optimum, significant collapse of the head might still occur. In general, it is agreed that hips with poor reduction do more poorly than those that are well reduced. Some authors believe that more important than the accurate reduction in terms of long-term prognosis is the original status of the

fracture, i.e. whether the fracture is displaced or impacted. It is also believed by some that the amount and type of displacement is more important than the angle (Pauel's) of the fracture in providing some clues about the long-term outcome. The fact that becomes clear is that if there existed a technique of predicting whether a fracture femoral neck will or will not unite, it would be relatively easy to decide which patient should have prosthetic replacement and which should be treated by internal fixation of the fracture. Unfortunately, no such foolproof criteria exist that enable a surgeon to choose one type of treatment over the other.

The results of prosthetic replacement are not consistently excellent, but for internal fixation they are either extremely good or horrible. Studies have also shown fewer failures with prosthetic replacement for acute displaced fractures than with internal fixation.

It seems that given the facts as they stand today, if a patient can be expected to tolerate a secondary procedure in the event of failure of internal fixation, and if the patient, understanding the nature of the problem, is willing to gamble for excellence over failure, a strong case would be made for internal fixation. If, however, the patient is elderly or in poor general condition and has activity requirements that are limited, prosthetic replacement might be the better choice.

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