EXTERNAL FIXATION OF INTERTROCHANTERIC FRACTURES OF FEMUR IN ELDERLY

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ABSTRACT

Twenty patients with intertrochanteric fractures of the femur were treated by external fixation. They were selected because of their surgical risk and evaluated clinically and radiographically after 6, 12 and 18 weeks. Fourteen out of twenty patients had excellent results. Caxa vara deformity, shortening and delayed union was observed in two patients. Results indicate that external fixation is a useful method for treatment of these type of patients.

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KEY WORDS: External fixation; Femur; Intertrochanteric fracture.

Introduction

Intertrochanteric fractures constitute almost half of all fractures of the proximal femur [1]. The average age reported in these patients is 66 to 76 years [2-6]. Quite a few of these elderly patients have associated medical problems of hypertension, diabetes mellitus, ischaemic heart disease and poor general condition labelling them high risk surgical candidates for open reduction and internal fixation of their fractures. Conservative treatment by means of skeletal traction in bed leads to complications of recumbency like bed sores, infections, renal stones, wasting of muscles, equinus deformity at ankle and thromboembolic disease apart from increasing their hospital stay and expenditure. Closed reduction and external fixation is an alternative procedure, which minimises these complications. We present our results in a group of patients who were selected because of their high surgical risk.

Material and Methods

Twenty patients with intertrochanteric fractures were treated with external fixation during the period from January 1996 to December 1997.

There were 18 males and 2 females with an average age of 65 years. Right hip was affected in 12 and left hip in 8 of the cases. The fractures were classified as per Boyd & Griffin's classification [3] and only types I & II were chosen (Table 1). The patients were evaluated before operation with special regard for their anaesthetic risk, previous diseases and possibility of infection. Those who presented the highest risk were selected.

Procedure: The patients had either spinal or epidural anaesthesia. Closed reduction was carried out on an Orthopaedic table and Anteroposterior radiograph taken (Fig 1). Two or three schanz pins were passed after giving stab incision through the greater

TABLE 1
General statistics of the series

General statistics	No. of cases n=20
<i>Side affected</i>	
Right	12
Left	8
<i>Age</i>	
60-65 yrs	10
65-75 yrs	10
<i>Sex</i>	
Male	18
Female	2
<i>Type of fracture (Boyd and Griffin)</i>	
Type-I	11
Type-II	9
<i>Period of non weight bearing</i>	
12 weeks	18
12-16 weeks	2

TABLE 2
Results in this series

Results	No. of cases	Percentage
Excellent	14	70%
Good	4	20%
Fair	2	10%
Poor	0	0%
Total	20	100%

TABLE 3
Complications in the series

Complications	No. of cases	Percentage
Pin track infection	4	20%
Coxa vara deformity, shortening and delayed union	2	10%
Non union	0	0%
Total	6	30%

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Fig. 1 : Plain radiograph antero-posterior view of affected hip showing the fracture

Fig. 2 : Plain radiograph antero-posterior view of the affected hip with external fixator in situ

trochanter into the neck directing the pins towards the opposite anterior superior iliac spine and parallel to the floor. Two schanz pins were also passed 5-7 inches distally into the shaft perpendicular to the long axis of the femur. Antero posterior radiographs were then taken to check the position of these pins (Fig 2). Schanz pins were then clamped to tubular rods and skin closed (Fig 3). There was no blood loss and average operating time was 30 min-

Fig. 3 : Photograph of the affected hip showing external fixator assembly

Fig. 4 : Photograph of the patient ambulant with the help of axillary crutches on third post operative day

utes. Post operatively all patients were given antibiotics and analgesics for 48 hours and patients were made ambulant (non weight bearing) with a pair of axillary crutches or walker on 3rd post operative day (Fig 4). Patients were discharged after 7 days of surgery. At discharge the patient's relatives were taught to keep the pin tracks clean and dressed with betadine daily.

Fig. 5 : Plain radiograph of the affected hip showing good radiological union at the end of 12th week

Patients were called for follow up at 6, 12 and 18 weeks of surgery and were assessed clinically and radiologically for the progress of union (Fig 5).

Schanz pins were removed at 6 weeks and non-weight bearing ambulation with axillary crutches or a walker continued.

Gradual weight bearing was permitted after 12 weeks after confirming the union clinico radiologically. Crutches were replaced with a walking stick after completion of 18 weeks.

Results

Bony union was achieved in 18 cases, after 12 weeks and after 16 weeks in 2 cases. 14 of the 20 cases had excellent results with no shortening or deformity, good range of movements at hip and knee, and returned back to their pre fracture status.

Four of the patients had good results. These had pin track infection which was managed locally with dressings and antibiotics. The pin tracks healed within 15 days of removal of pins. Two patients had coxa vara deformity and shortening due to the loss of reduction. These patients were given a shoe raise for ambulation

Discussion

Inter-trochanteric fracture is common in the elderly age group with high morbidity. Morris found extracapsular fractures to be four times more common as femoral neck fractures and to occur primarily in the elderly [7]. The average age in this series was 65 years as compared to 66-76 years reported in literature [2-6]. 90% of the cases were males in this series even though these fractures are more common in females [5]. Barros et al treated 40 patients of inter trochanteric fractures with external fixation of which 32 were females [8].

Hypertension, diabetes mellitus, ischaemic heart disease, anemia and poor general condition were the main risk factors present in our patients making them high surgical risk. Severe anaemia, polytrauma, cardiomegaly, chronic obstructive pulmonary disease, diabetes mellitus, cerebro vascular accident and ovarian carcinoma were reasons give by Barros et al for externally fixing intertrochanteric fractures in his series [8].

All the 20 cases were fixed with 2 schanz pins in trochanteric area and 2 in the shaft and stabilised by a tubular rod and clamps after close reduction. Barros et al however used 4 Schanz pins each in the above 2 sites[8]. Bony union was achieved in 18 cases by 12 weeks. Remaining 2 united after 16 weeks. 4 of the patients had pin track infection and 2 had coxavara deformity with shortening. The latter was due to the loss of reduction. Reaction around pins without clinical infection was present in 21 of the 40 cases in Barros et al's series. They however had no case of loss of reduction, loosening or breakage of pins [8]. This is probably because of more number of pins (eight), he used in each of his patients as compared to 4 used in this series.

External fixation application for inter-trochanteric fractures in elderly patients having high surgical risk is a simple, quick, inexpensive modality of treatment with minimal surgical trauma. It reduces the morbidity and mortality by early mobilisation of the limb and patient. It is economical as it reduces the hospital stay. The disadvantages of this procedure are of risk of pin track infection and the fixator is cumbersome for some patients.

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