INTERNAL FIXATION OF TROCHANTERIC FRACTURES BY THE DYNAMIC HIP SCREW

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By

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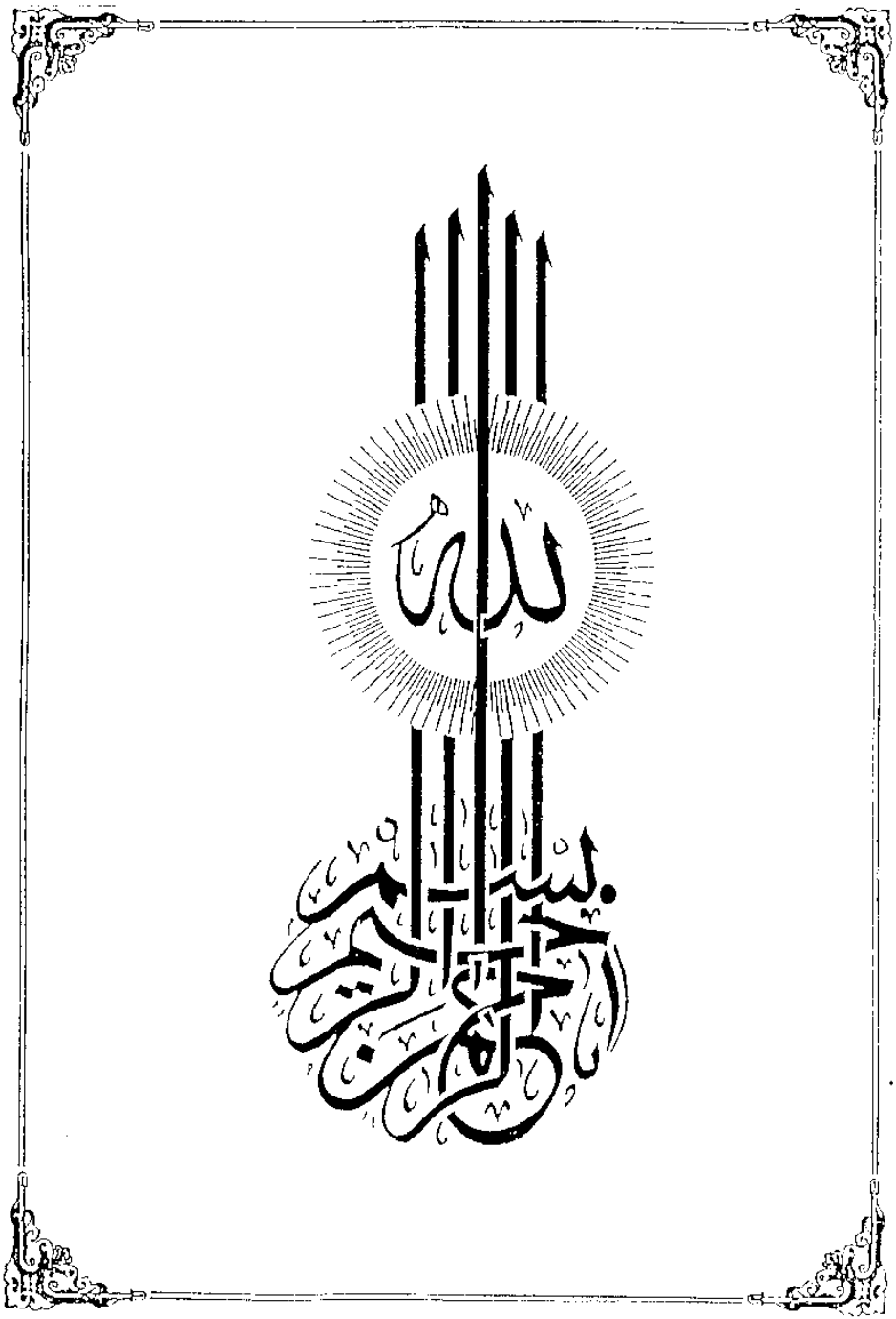

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CONTENT

INTRODUCTION

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Hip fractures, either subcapital or trochanteric, are now the commonest operative emergency in the elderly, and their incidence is increasing (Esser et al., 1986). Approximately 200.000 hip fractures occur annually in the united states accounting for 30 percent of all patients hospitalized for the treatment of fractures (Barr, 1984). Although common in Egypt, yet there is no similar statistical study. Evans, 1949 and others reported that patients with inter- trochanteric fractures were 10 to 12 years older than those with intracapsular femoral neck fractures. The average age reported in these patients was 66 to 76 years of age (Boyd and Griffin, 1949). The ratio of females to males ranges from 2 to 1 (Sarmiento & Williams, 1970) to 8 to 1 (Cleveland et al., 1959; Dahl, 1980). This higher incidence in females was attributed to metabolic bone changes which occur after menopause (Cleveland et al, 1959). Morris, 1941, found extracapsular fractures to be four times as common as femoral neck fractures. These fractures frequently occur through osteoporotic, osteomalcic bone and occasionally pagetoid bone.

Being mostly elder, such patients usually suffering from many systemic diseases. These diseases may be cerebral atherosclerosis, psychosis, hypertension, diabetes, senility, cardiovascular, pulmonary or urinary disorders (Sherk and Foster, 1985). These systemic troubles are added to the local complications of osteoporosis and comminution at the fracture site.

An increase in morbidity and mortality associated with closed methods of treatment for intertrochanteric fractures led to a general agreement for internal fixation of such fractures (Cleveland et al. 1959; Evans, 1951; Kaufer et al., 1974; Kyle et al., 1979; Sherk and Foster, 1985). Prolonged bed recumbency with closed methods of treatment expose the patient for many local & systemic complications. The systemic complications include mental and psychological apathy, bed sores, fracture disease, urinary tract infection, chest infection and thromboembolic syndrome. Thromboembolic syndrome represents one of the most common and early fatal complications after orthopaedic trauma (Culver et al., 1970). The local complications with closed methods of treatment for pertrochanteric fractures include varus external rotation deformity with marked shortening and limp.

However, some recent reports (Holland et al., 1977; Hunter, 1974-1975; Shaftan et al., 1967) stated that, open reduction and internal fixation may increase patient comfort, facilitate nursing care and decrease hospitalization stay but may not effect a difference in mortality.

The goal of surgical treatment of intertrochanteric fractures must be restoration of the patient to his preinjury status at the earliest possible time. This may be just pain relief for patient who was non ambulatory prior to injury.

Also this may be full and early weight bearing for those who were actively ambulating before injury (Rowe, 1965).

At the local level, the goal of internal fixation of such fractures is to allow early use of the limb, by stable reduction and firm good fixation (Delee, 1984) thus minimizing malunion later on in a varus and external rotation position. The malunited fractures will cause much troubles to the patient such as marked limping and proximal femoral instability.

The strength of the fracture fragment- implant assembly is determined by five variables (Kaufer, 1980). These variables are:

1) bone quality.
2) fragments geometry
3) reduction
4) implant design

and 5) implant placement

Of these five factors, bone quality and fracture geometry are beyond the control of the surgeons. They have to use the other three variables to achieve a stably reduced, internally fixed intertrochanteric fracture.

Many authors used different implant designs, different sites for implant placement together with different types of fracture reduction. They aimed to obtain the optimal results each for his own technique.