IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 22, Issue 2 Ser.12 (February. 2023), PP 58-72
www.iosrjournals.org

Study of Functional Outcome in Patients With Age Less Than 50 Years With Neck Of Femur Fracture Treated With 6.5mm Cannulated Cancellous Screws.

T SHYAMDHAR
ASSOCIATE PROFESSOR
DEPARTMENT OF ORTHOPAEDICS
GOVERNMENT MEDICAL COLLEGE
ANANTHAPURAM

RAJESH PONNADA
SENIOR RESIDENT , RIMS COLLEGE, SRIKAKULAM.

R.P.RAGHAVENDRA RAJU
ASSISTANT PROFESSOR
GOVERNEMENT MEDICAL COLLEGE,
ANANTHAPURAMU

Y KIRAN KUMAR
ASSISTANT PROFESSOR
DEPARTMENT OF ORTHOPAEDICS
GOVERNMENT MEDICAL COLLEGE
ANANTHAPURAMU

Date of Submission: 10-02-2023 Date of Acceptance: 22-02-2023

KEYWORDS- NECK OF FEMUR FRACTURE, HIP PAIN , CANNULATED CANCELLOUS SCREWS

I. INTRODUCTION

Intracapsular neck of femur is a severe traumatic condition that accounts for more than half of allhipfractures,whichprimarilyoccurintheelderlyafterfalls.IC#NOFshavepresentedsignificantchallengestoorthopaedicsurgeonsandabidetobeanunsolved fracture in terms of treatment and outcomes. Our society is becoming moregeriatric as life expectancy rises with each decade, with a significant increase in thefiguresofhospitalised& nursinghomepatientswith IC#NOFsandtheirsequelae.
In 1990, Asiaaccounted for 26% of all hip fractures, but this figure is likely to rise to 37% in 2025and 45% in 2050. We accomplish that the socioeconomic impact of hip fractures willincrease significantly throughout the world, particularly in Asia, and those preventivestrategies,particularly indeveloping countries,are urgentlyneeded.[1]
IC#NOFarecommonintheelderlyafteraminorfall.#NOFinadultsbelowthe age of 50 are uncommon and frequently the result of high-energy trauma. Toevaluate and treat # NOFs, it is critical to understand and contrast the differencesbetweenelderlyandyoungadultpatients.Differencesinosseousandvascularanatomy, mechanism of injury, associated injuries, fracture pattern, and treatmentgoalsare observed.

Youngadult#NOFsareassociatedwithanincreasedriskoffemoralheadAVN and nonunion. In young patients following a # NOF, the rate of avascularnecrosisreportedintheliteraturerangesfrom12-86percent.Thisdreadfulcomplication may result in collapse of femoral head and subsequent osteoarthritis.Reoperation and salvage procedures, such as osteotomy, have a high failure rate,andarthroplasty procedures arenot idealyoungage.
The surgical management consists of fracture reduction and stabilisation, whichallows for early patient

mobilisation and reduces many of the demerits associatedwith bed rest for prolonged period. There are several options for stabilising # NOFs.Cannulatedcancellousscrewsfixationor a dynamichipscrew, hemiarthroplasty,and THRareallpossible options.[2]

The aim of this study is to assess the treatment of an IC # NOF withmultiplecannulatedcancellouslagscrews.Casesselectedforthissurgeryare between the ages of 15 and 50 and had a # NOF and were admitted and treated atKurnool Medical College and Hospital in Kurnool, A.P., between October 2019 andOctober2021.

II. MATERIALSANDMETHODS

The present work on STUDY OF FUNCTIONAL OUTCOME IN PATIENTS WITH AGE LESS THAN 50 YEARS WITH NECK OF FEMUR FRACTURE TREATED WITH 6.5mm CANNULATED CANCELLOUS SCREWS." is carried out in the Orthopaedics department, Kurnool Medical College andHospitalduringOctober2019toOctober2022.Allthecaseswereevaluatedpreoperatively to classify the fracture type using "Garden's Classification" and wereprepared for surgery. The Leadbetter technique was used to reduce the fractures. 20adult cases of IC # NOF were managed with 2 or 3 partially threaded 6.5 mmcannulatedcancellous screws after accuratereduction andrigid internal fixationunderX-ray control.

InclusionCriteria:

- Agebelow50yearsirrespectiveofgender
- FreshIC#NOF withoutcomminution

ExclusionCriteria:

- Pre-existinglesionsofthehipsuchasavascularnecrosisofthefemoralheadanddegenerativearthritis.
- Oldnonunion&mal-unionIC#NOF
- Preexisting neurologicaldisorders.

SurgicalProcedure:

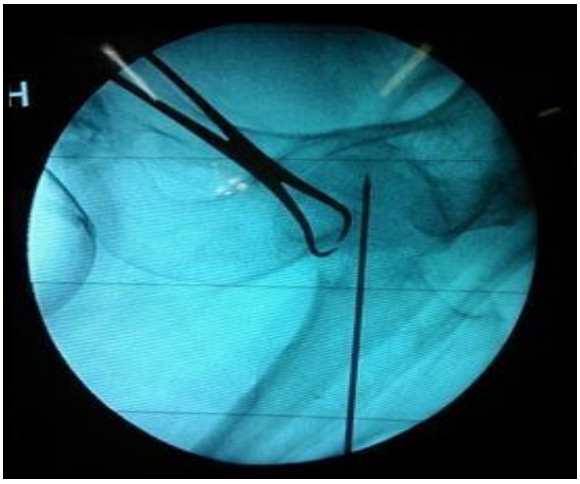
All the patients were operated under spinal anaesthesia.The patient was placed on the fracture table and thefracture was reduced under c ram machine.

Technique:

Following the reduction, a longitudinal incision was made across the lateralsurface of the greater trochanter.

Guide pins are inserted through the fracture from the lateral cortex, parallel tothe neck, and at a 135° angle. Place one guide pin at a 135° angle adjacent to themedial cortex. Two guide pins, one anterior and one posterior, are placed in themiddle of the head and driven to within 5mm of subchondral bone. Under fluoroscopyguidance, the guide pins should be measured to determine the correct screw length.Afterconfirmingthepositionoftheguidewiresintheneck,drillandtapovertheguidewireswithacannulateddrillbitandacannulatedtap,respectively.Thecannulatedscrewdriverwasusedtoinsertcannulatedcancellouslagscrewsovertheguidewires. Underfluoroscopic guidance,adequatefixationis confirmed.

The screws should be no more than 5mm from the subchondral bone. Washerswere used as needed to keep the screw head from shrinking and to achieve uniformcompression at thesiteoffracture. The guidewire must be removed aftereachscrew has been tightened. Drill, tap, and insert each screw before moving on to thenext to avoid loss of reduction. It is necessary to achieve hemostasis. Over thesuctiondrain,thewound was closed in layer.



Guidewireinsertion

PostoperativeManagement:

Thepatientiskeptsupine,withapillowundertheknee.I.Vantibioticsweregiven for 5days,oralantibiotics for 5days,andanalgesics fora week.
Onthefirstpostoperativeday,allpatientsweremobilisedinbedwithquadricepsandhamstringsexercises,as wellas anklemovements.
OnthesecondPOD,patientswereinstructedtositwithoneleghangingdownfromtheedge of the bed.
Non-weightbearingcrutchwalkingwasadvisedonthethirdPOD.

Follow up:

Patients were evaluated radiologically and functionally at 6 weeks, 3 months,and 6 months. After definite radiological evidence of union, full weight bearing ispermitted

Harris hipscoringsystem[3](HHS):

FunctionaloutcomeswereevaluatedbasedonHHSsystemasfollows

- Poor:HHS<70.
- Fair:HHS-70-79.
- Good:HHS-80-89.
- Excellent:HHS-90-100.

III. OBSERVATIONSANDRESULTS

Thefollowingobservationsweremadebasedondatacollectedbetween October 2019 and October 2021 in the Orthopaedics department at GovernmentGeneral Hospital, Kurnool during a study of IC# NOFs in patients below age of 50fixedbyusingA.O. Cannulated Cancellous Screws.

Incidencebyageand gender:

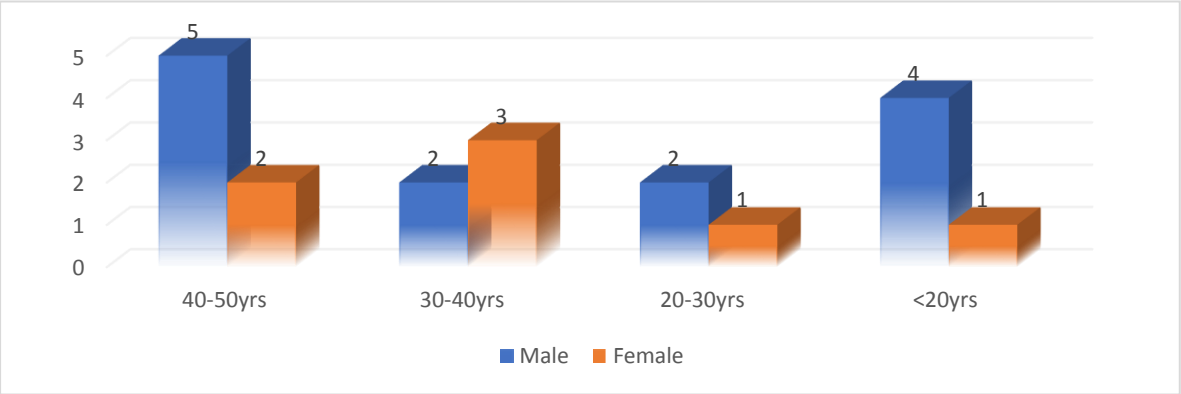
The maximum age in our study was 50 years for men and 50 years for females.Themajorityofthecaseswereamongtheagesof30and50,withanaverage ageof 30.15formalesand34.28forfemales.Therewere13malepatientsand7femalepatients,indicatingamale predominanceoverfemales. Right hip was more affected than left side in our study.Most common mode of injury is slip and fall on flat ground followed by RTA.

Table1:Sampledistribution by ageandgender

Age/Sex	Male	Female	Total

40-50years	5(71.4%)	2(28.6%)	7(35%)
30-40years	2(40%)	3(60%)	5(25%)
20-30years	2(66.6%)	1(33.3%)	3(15%)
<20years	4(80%)	1(20%)	5(25%)
Total	**13(65%)**	**7(35%)**	**20(100%)**

Chart1:Sampledistribution by ageandgender.



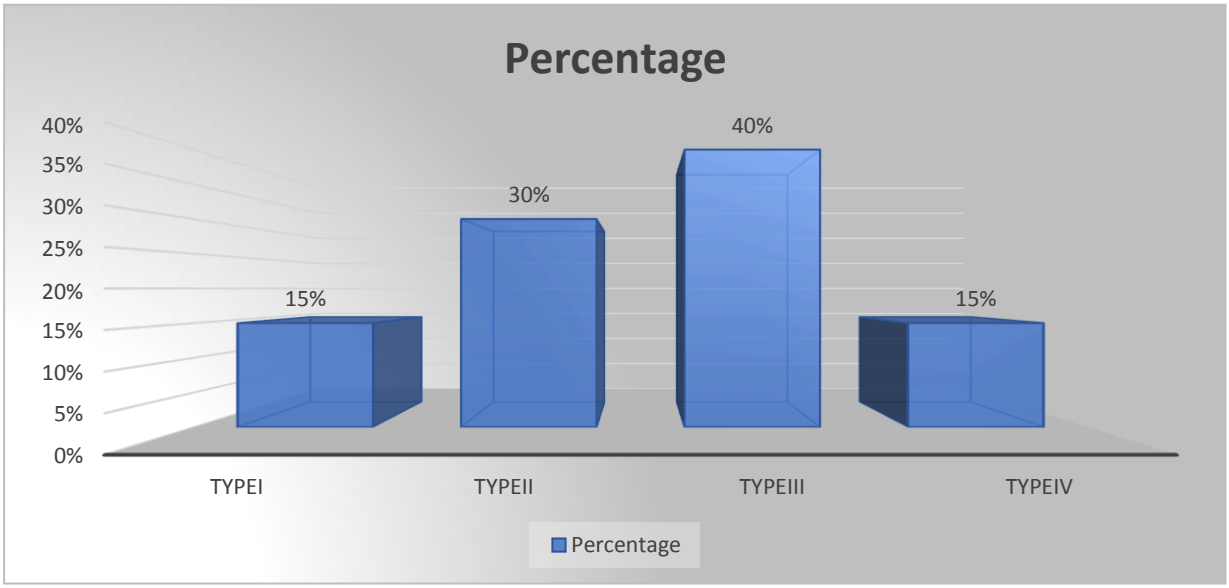
TypeofFracture:
On radiographic examination,8 (40%) cases were Garden type III. There weresix cases with type II fractures, three with type I fractures, and three with type IVfractures.

Table3:SampledistributionbasedonFractureType

Garden'stype	Frequency	Percentage
I	3	15%
II	6	30%
III	8	40%
IV	3	15%
Total	**20**	**100%**

Type	Frequency	Percentage
Displaced	11	55%
Undisplaced	9	45%

Chart3:SampledistributionbasedonFractureType



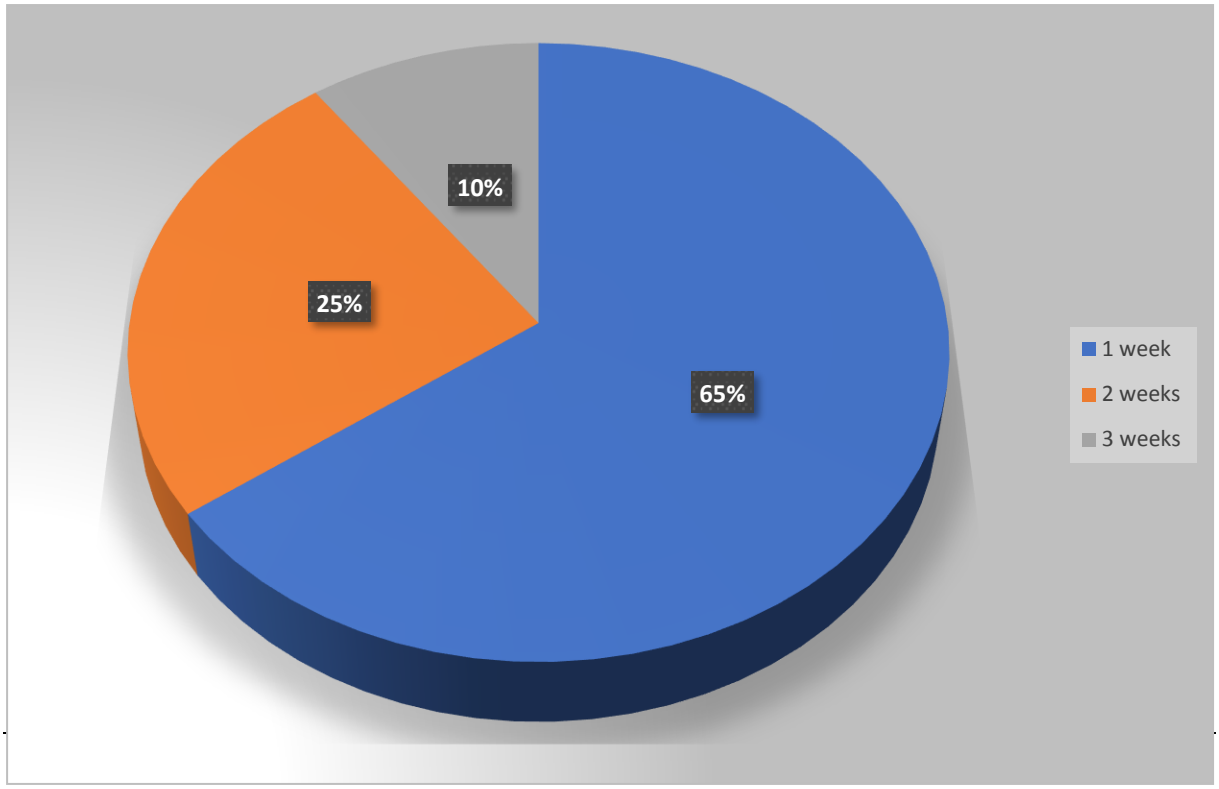
Timefrominitialtraumatosurgery:

Withintwoweeks,90percent(18)ofpatientshadsurgery.Becauseofassociatedmedicalconditionsanddelayedpresentationtothehospital,theremaining patients had longer preoperative hospital stays. They were operated onafter appropriate medications were used to treat and control the associated medicaldisorders.

Table6:Sampledistributionbasedon timeofoperation

Time of surgery from initialtrauma	No. patients	Percentage
1 week	13	65%
2 weeks	5	25%
3 weeks	2	10%

Chart6:Sampledistributionbasedontime ofoperation



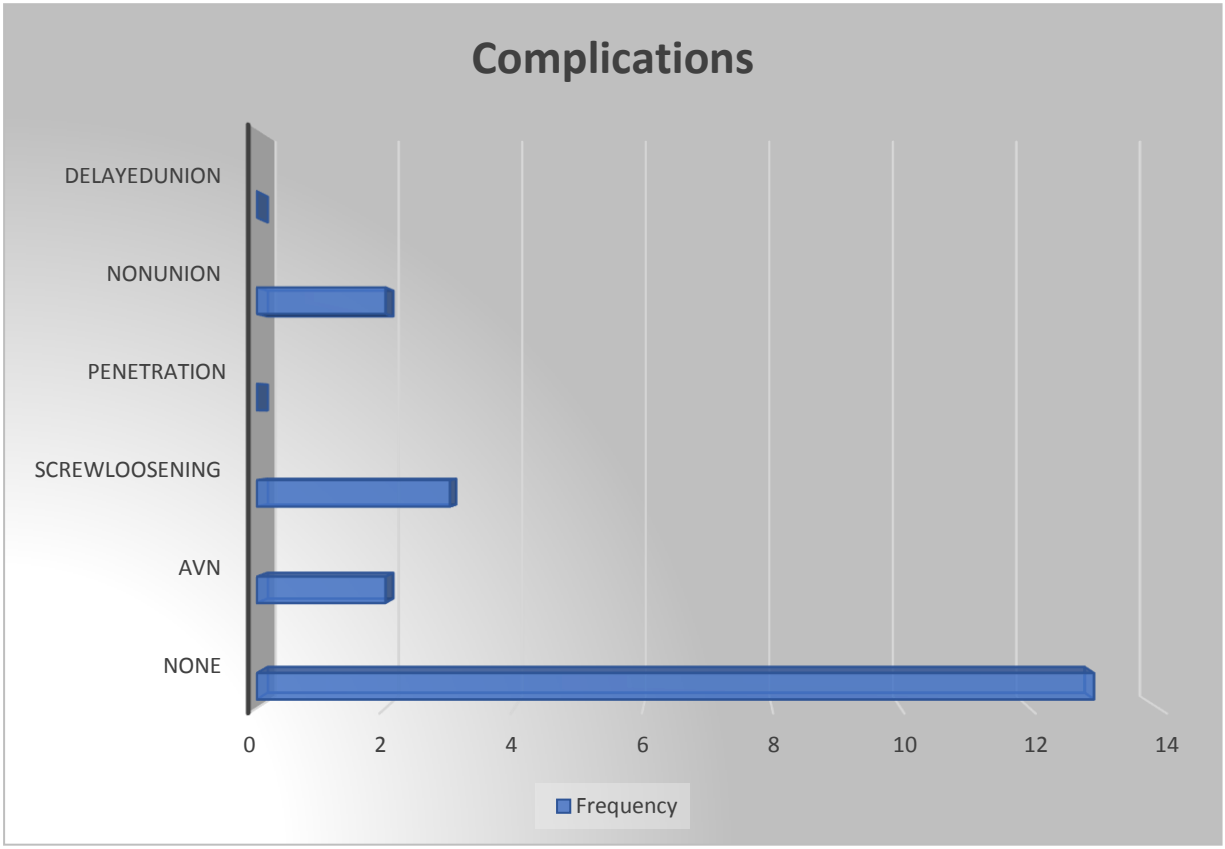
Complications:

Themajorityofthecaseshadnocomplications;twohadAVN,threehadscrewloosening,andtwohad nonunion.

Table7:SampleDistributionBasedonComplications

Complication	Frequency	Percent
None	13	65%
AVN	2	10%
Screwloosening	3	15%
Screwpenetration	0	0
Nonunion	2	10%
Delayedunion	0	0
Total	**20**	**100.0**

Chart7:SampleDistributionBasedonComplications



FunctionalAssessment:

Cases were followed up on after 6 weeks, 3 months, and 6 months. The HHSsystem was used to assess the functional outcomes of internal fixation with A.O.cannulatedcancellousscrews.Thefollowingdomainsareusedforevaluation.

TotalFunctionalOutcome:

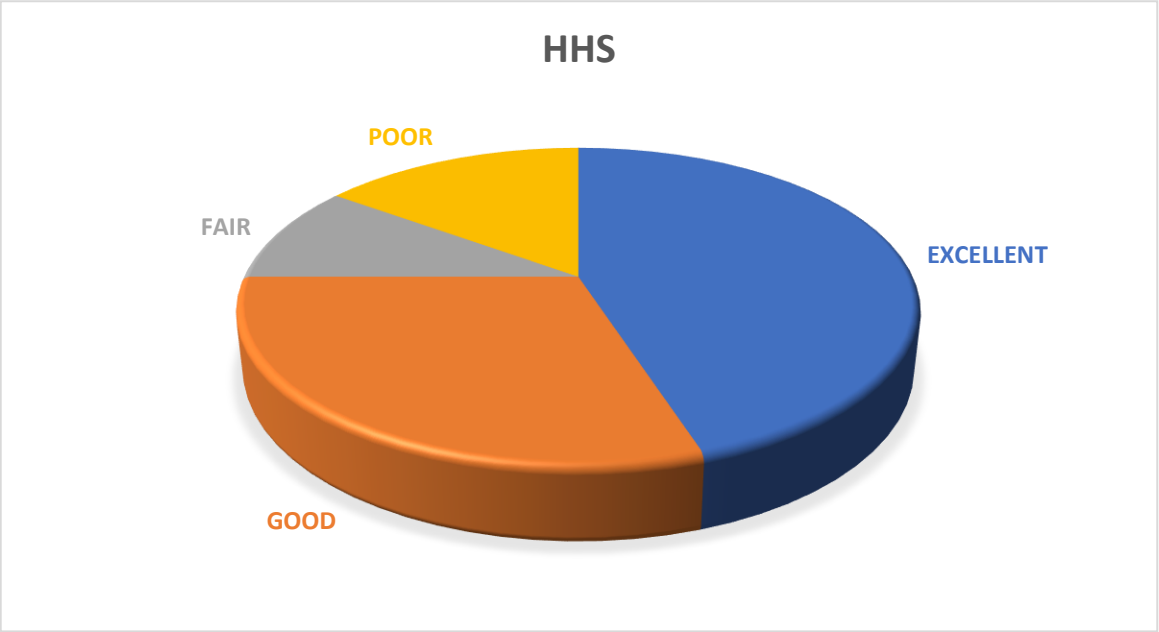
The functional assessment was classified as excellent, good, fair, or poor aftercombining the scores given for each functional valuation criterion. The entire HHS atsix months in our study ranged from 31.85 to 99.80. Nine (45 percent) of the caseshad hip scores ranging from 90 to 100. (excellent). Six (30%) had hip scores rangingfrom80to89.(good).Two(10%)receivedascoreof70to79(Fair),andthree(15%) received a score of less than 69. (poor). Thus, 85 % cases had a satisfactoryto excellent outcome, while 15 percent had a poor outcome. The

following tablesummarisesthe remarksmadeduringthefunctionalassessment.

Table 17: Sample distribution based on functional outcomes at the end of 6monthsin termsof HHS.

HHS	Frequency	Percent	Results
<69	3	15%	Poor
70-79	2	10%	Fair
80-89	6	30%	Good
90-100	9	45%	Excellent
Total	**20**	**100%**	**-**

Chart 17: Sample distribution based on functional outcomes at the end of 6monthsin termsof HHS.



RadiographicResults:

Theradiologicalobservationsinourstudyandareshowninthetablebelow.

Table 18: Distribution of cases based on radiographic union at the end of 6months

Monthsforsignsofunion	Frequency	Percent
Threemonths	13	65%
Four months	3	15%
Sixmonths	2	10%
Nonunion	2	10%
Total	**20**	**100%**

Chart 18:Distribution of cases based on radiographic union at the end of 6months

DISCUSSION

NOFs are growing at a geometrical rate due to the general population'slongevity. It's a common among aged people with osteoporosis. It's very commonamong postmenopausal women. Although it is unusual in both paediatric and youngadults, it is frequently the outcome of high-energy trauma in this age group. In olderpeople with already compromised bones, even slight stress might result in a fracture.Afragility fracture is anothernamefor a#NOF.

An orthopaedic surgeon still faces a huge and tough problem in managing a #NOF. With a variety of supplemental treatments ranging from osteosynthesis to THR,thependulumis swingingbetween reductionandinternal fixation.

In Western countries, such situations are treated with total hip arthroplastybecausetostyleandreligiousconstraints.Squattingorsittingcross-leggedispreferred in our country. Aside from the financial implications, total hip replacementdoes not allow for the requisite range of motion. As a result, it is critical to protect theoriginalhipjointat allcosts.

In this light, we did this research to assess the immediate results of fixation inthe femur fracture neck by utilising 6.5mm A.O. Cannulated Cancellous Screws whilekeepinginmind the living conditions ofthe averageIndian.

DistributionofAge:

Males had a maximum age of 50 years and females had a maximum age of 50years in our study. The bulk of the cases were among the ages of 35 and 50, withmalesonaverage30.15yearsoldandfemalesonaverage34.28 yearsold.

Other writers describe the following age distributions: Mukherjee and Puri[31](1986) 65 years; and Arwade[32] (1987) 54-86 years with an incidence of 70-80 years(Average72years).SaxenaandSaraf[33](1978)showeda75-yearagedistributionof 45-90 years (Mean 66 years). According to Bavadekar and Manelkar[34](1987), themean age of new fractures was 75 years, whereas themean age of old fractureswas62 years.

Incidenceofsex:

Males were more likely than females to suffer a IC # NOF in our study, and wediscovered a alteration in the mode of injury between men and women, with mensuffering fractures from falls from great heights and RTA, whereas females sufferedfracturesfromfallsonthesamelevel.Elderlyfemalesaremoreproneto#NOFsasaresultof osteoporosis(Choudhari& Mohite[35]1987).

Accordingtosomestudies,womenoutweighmen.Moore[36](1957)received

62.5 percent, Campbell (1960) received 80.9 percent, Cone (1963) received 73.6percent, Anderson & Neilson[37](1972) received 85 percent, Sikroski& Barrington[38](1981) received 66.7 percent, Arwade[32] (1987) received 68.3 percent, and JohnnE.Kenzora[39] (1998) received 77.4 percent. Male predominance has been discovered

inseveralstudies:MukherjeeandPuri[31](1986):58.3percent;Amte&Sanchetti(1987):55percent;BavadekarandManelkar[34](1987):55percent;D'AcryandDevas[40] (1976): 91.4 percent. In our study, females made approximately 35% of thepatients.

FractureSide:

A fractured right hip was found in 14 patients (70%) in our investigation. This isin line with the findings of Boyd and Salvatore[41] (1964), who found a 55 percent left-side fracture rate. D'Acry and Devas[40](1976) discovered that 55.4 percent of theirpatients'lefthips werefractured.

FractureType:

TheGardencategorizationisusedbasedontheavailableanteroposteriorradiographic image. Garden type III fractures were found in the most of cases (40%)on radiographic evaluation. Garden type II fractures were present in six patients,while Garden type I fractures were present in three. Three patients were present tohave garden type IV fractures. Type III and IV fractures were also classified asdisplacedfractures, accounting for 55percentofallfractures.

Mechanismof Injury:

A fall from a height or from the same level resulted in a fracture in 85 percent ofour cases. Severe trauma, such

as car accidents, caused the remaining fractures.The majority of studies - Gyepes (1962), Solomon (1968), Evarts[42] (1973), Fielding[43](1974), Ingalhalikar[44] (1987), Seth[45] (1987), and others - agree with this. IC # NOF,according to Stevens et al.[46](1962), Scott and Gray (1980), Urovitz et al. (1977),Colonel M.K. Seth (1987), and others, are stress fractures induced by diseased bonecausedbyosteoporosis or osteomalacia.

AssociatedMedicalIssues:

The most common issues in our study were gross anaemia, hypertension, anddiabetes mellitus. One or more of the problems were encountered by 50% of ourpatients. Hinchey and Day[47](1964) found that 84.6 percent of their patients hadcomparable issues, with the remaining having minor anaemia and mild HTN butnormalhealthandbeing classifiedas nil.

AnaemiawasaseriousproblemthatwashardlyaddressedinWesternliterature. In western research, ischaemic heart disease is common, but not so muchin ours. After a patient is admitted with a fractured femur neck, HTN and DM areusually discovered.

Hospitalization:

Preoperative hospitalisation lasted anywhere from 2 to 18 days in our study,with a mean of 8.23 days. The average hospital stay was 22.23 days since thepostoperativestaywasmoreor less stableat14 days.

Stinchfield and Cooperman[48](1957) reported 31.5 days hospital stay.A.A.Savastanoetal[49].(1958)reporteda38-daystay,FosterandMatchett(1965)reporteda28-daystay,JohonsonandCrothers(1975)reporteda30-daystay,and S. Delkel[50](1976) reported a 21-day stay. We didn't perform surgery on any of thepatients as an emergency, and they were all well-prepared prior to the procedure.Fiftypercentofourcasestakentosurgeryonthefirstavailable OTdaywithinthefirst week of their hospitalisation.By the second week, half of the patients hadinternal fixation. Patients with diabetes, hypertension, and other medical issues wererequired to wait at least three weeks before undergoing surgery. Patients who did nothave any operational or postoperative problems were discharged when the sutureswere removed. By the second week, around 70% of our cases could be discharged.During the postoperative phase, patients with complications such as surgical woundinfection, unmanageable medical problems, and so on were needed to stay in thehospitalforanextendedamountoftime.Allofthecasesinourstudyweredischarged withinthree wks of surgery.

In comparison, a shorter hospital stays following surgery with CC screws hasbeenobservedinotherresearchasabenefitthatbenefitspatients'financialcondition. We also noticed that many of our rural patients were unable to travel to thehospitalin atimely manner.

Complications:

65%ofcasesdidnothaveanycomplications.ComplicationssuchasAVN,nonunion,andscrew loosening weredocumented intheremainingpatients.

Femoralheadavascularnecrosis

Inourresearch,wediscoveredtwoincidencesofAVN.Vascularinjuryfromtheinitial#NOF,inadequatereductionorfixationquality,andelevatedintracapsularpressureareallexplanationsandriskfactorsforAVN.AVNwasoriginallydocumentedin10–20percentofundisplacedfracturesand15–35percentofdisplacedfracturesbyPhemister[51].Ratlifffounda42percent(30of70cases)incidence,Allende-Lezamareporteda25%(2of8instances),CarrelandCarrelreporteda35percent(4of11cases),IngramandBachinskyreporteda55percent(13of24cases),andMcDougalreporteda58percent(14of24cases).KBLLee[52]founda6%incidence,E.M.Toh[53]foundan11%incidence(11of100cases),andChen[54]et al. found a 67.57 percent incidence.

Revascularization of the femoral headis a lengthy procedure that can take up to two years and in rare cases much longer.**Nonunion:**

In our investigation, only two cases of nonunion (10 percent incidence) weredocumented, most likely due to incorrect implant location in which one of the screws'threads did not reach the fracture site. This is a far lower rate than that found in otherstudies.

Othercomplicationsinclude:

Three individuals in our research had screw loosening but no clinical difficulties,with the exclusion of one case in which one of the three screws was removed. Noonehasever hada screw gothroughthejointcavity.

FunctionalEvaluation:

Pain:

Inourresearch,wenoticedthatfourpatients(20%)werepain-free.Onambulation,9patients(45%)hadminorpain,and5(25%)hadmildpainthatnecessitated the use of NSAIDs.Two cases had severe pain. All cases in this studyare of below 50 years, and following surgery, they looked to be more sensitive topain.Thebulkofthiscouldbemanagedwithmildanalgesicsorconservativemeasures,anddailyactivities were unaffected.

It agrees with Chen[54]et al findings, which found that practically all patientssufferedpainwithinonemonthofhavingosteosynthesiswithCCscrewsfixed.

Limpandcane use:

The majority of the cases in our study (65 percent) walked with a minor limp. In10% of patients, the limp was moderate.It's mostly due to a shift in the abductormechanism asaresultoftheneckbecomingimpingedduringweight bearing.

In our study, 65 percent of patients did not require the use of a cane to walk,20%usedone for longtreks, and10%usedone themajorityof thetime.

Totalfunctionaloutcomes

The functional results of internal fixation were assessed using a number ofcriteria. In India, we are expected to sit cross-legged & squat without much difficulty.Thepatient'shipjointshouldhaveflexion,abduction,adduction,andexternalrotation,as wellas fullflexionat the knee joint,todo this.

The patient's ability to walk with or without assistance, as well as the range ofhip motions, are the most critical elements in determining success in the westernseries. In contrast, the Indian series emphasised the ability to squat and sit cross-legged.

In our study, the final outcome at 6 months following surgery with CC screwswere analysed using theHHS system. 73 The main purpose ofthis managementwas to get them back to their pre-surgical state. At six months, 85 percent of caseshad regained their premorbid ambulatory level, and 95 percent had experiencedsignificantpainalleviation.

Thelargedifferencebetweenfunctionalandradiologicalfindingsismostlyattributable to pain and limp, which are both prominent norms in the HHS system,reducing the frequency of good and excellentresults in this research. Despite thefact that pain and limp were existing in the majority of our cases, none of them weresevere enough to necessitate a secondary surgical procedure beyond screw removalintheinstanceof screw loosening.

DISCUSSION

NOFs are growing at a geometrical rate due to the general population'slongevity. It's a common among aged people with osteoporosis. It's very commonamong postmenopausal women. Although it is unusual in both paediatric and youngadults, it is frequently the outcome of high-energy trauma in this age group. In olderpeople with already compromised bones, even slight stress might result in a fracture.Afragility fracture is anothernamefor a#NOF.

An orthopaedic surgeon still faces a huge and tough problem in managing a #NOF. With a variety of supplemental treatments ranging from osteosynthesis to THR,thependulumis swingingbetween reductionandinternal fixation.

In Western countries, such situations are treated with total hip arthroplastybecausetostyleandreligiousconstraints.Squattingorsittingcross-leggedispreferred in our country. Aside from the financial implications, total hip replacementdoes not allow for the requisite range of motion. As a result, it is critical to protect theoriginalhipjointat allcosts.

In this light, we did this research to assess the immediate results of fixation inthe femur fracture neck by utilising 6.5mm A.O. Cannulated Cancellous Screws whilekeepinginmind the living conditions ofthe averageIndian.

DistributionofAge:

Males had a maximum age of 50 years and females had a maximum age of 50years in our study. The bulk of the cases were among the ages of 35 and 50, withmalesonaverage30.15yearsoldandfemalesonaverage34.28

yearsold.

Other writers describe the following age distributions: Mukherjee and Puri[4](1986) 65 years; and Arwade[5] (1987) 54-86 years with an incidence of 70-80 years(Average72years).SaxenaandSaraf[6](1978)showeda75-yearagedistributionof

45-90 years (Mean 66 years). According to Bavadekar and Manelkar[7](1987), themean age of new fractures was 75 years, whereas themean age of old fractureswas62 years.

Incidenceofsex:

Males were more likely than females to suffer a IC # NOF in our study, and wediscovered a alteration in the mode of injury between men and women, with mensuffering fractures from falls from great heights and RTA, whereas females sufferedfracturesfromfallsonthesamelevel.Elderlyfemalesaremoreproneto#NOFsasaresultof osteoporosis(Choudhari& Mohite[8]1987).

Accordingtosomestudies,womenoutweighmen.Moore[9](1957)received

62.5 percent, Campbell (1960) received 80.9 percent, Cone (1963) received 73.6percent, Anderson & Neilson[10](1972) received 85 percent, Sikroski& Barrington[11](1981) received 66.7 percent, Arwade[5] (1987) received 68.3 percent, and JohnnE.Kenzora[12] (1998) received 77.4 percent. Male predominance has been discovered

inseveralstudies:MukherjeeandPuri[4](1986):58.3percent;Amte&Sanchetti(1987):55percent;BavadekarandManelkar[7](1987):55percent;D'AcryandDevas[13] (1976): 91.4 percent. In our study, females made approximately 35% of thepatients.

FractureSide:

A fractured right hip was found in 14 patients (70%) in our investigation. This isin line with the findings of Boyd and Salvatore[41] (1964), who found a 55 percent left-side fracture rate. D'Acry and Devas[13](1976) discovered that 55.4 percent of theirpatients'lefthips werefractured.

FractureType:

TheGardencategorizationisusedbasedontheavailableanteroposteriorradiographic image. Garden type III fractures were found in the most of cases (40%)on radiographic evaluation. Garden type II fractures were present in six patients,while Garden type I fractures were present in three. Three patients were present tohave garden type IV fractures. Type III and IV fractures were also classified asdisplacedfractures, accounting for 55percentofallfractures.

Mechanismof Injury:

A fall from a height or from the same level resulted in a fracture in 85 percent ofour cases. Severe trauma, such as car accidents, caused the remaining fractures.The majority of studies - Gyepes (1962), Solomon (1968), Evarts[15] (1973), Fielding[16](1974), Ingalhalikar[17] (1987), Seth[18] (1987), and others - agree with this. IC # NOF,according to Stevens et al.[19](1962), Scott and Gray (1980), Urovitz et al. (1977),Colonel M.K. Seth (1987), and others, are stress fractures induced by diseased bonecausedbyosteoporosis or osteomalacia.

AssociatedMedicalIssues:

The most common issues in our study were gross anaemia, hypertension, anddiabetes mellitus. One or more of the problems were encountered by 50% of ourpatients. Hinchey and Day[20](1964) found that 84.6 percent of their patients hadcomparable issues, with the remaining having minor anaemia and mild HTN butnormalhealthandbeing classifiedas nil.

AnaemiawasaseriousproblemthatwashardlyaddressedinWesternliterature. In western research, ischaemic heart disease is common, but not so muchin ours. After a patient is admitted with a fractured femur neck, HTN and DM areusually discovered.

Hospitalization:

Preoperative hospitalisation lasted anywhere from 2 to 18 days in our study,with a mean of 8.23 days. The average hospital stay was 22.23 days since thepostoperativestaywasmoreor less stableat14 days.

Stinchfield and Cooperman[21](1957) reported 31.5 days hospital stay.A.A.Savastanoetal[22].(1958)reporteda38-daystay,FosterandMatchett(1965)reporteda28-daystay,JohonsonandCrothers(1975)reporteda30-daystay,and

S. Delkel[23](1976) reported a 21-day stay. We didn't perform surgery on any of thepatients as an emergency, and they were all well-prepared prior to the procedure.FiftypercentofourcasestakentosurgeryonthefirstavailableOTdaywithinthefirst week of their hospitalisation.By the second week, half of the patients hadinternal fixation. Patients with diabetes, hypertension, and other medical issues wererequired to wait at least three weeks before undergoing surgery. Patients who did nothave any operational or postoperative problems were discharged when the sutureswere removed. By the second week, around 70% of our cases could be discharged.During the postoperative phase, patients with complications such as surgical woundinfection, unmanageable medical problems, and so on were needed to stay in thehospitalforanextendedamountoftime.Allofthecasesinourstudyweredischarged withinthree wks of surgery.

In comparison, a shorter hospital stays following surgery with CC screws hasbeenobservedinotherresearchasabenefitthatbenefitspatients'financialcondition. We also noticed that many of our rural patients were unable to travel to thehospitalin atimely manner.

Complications:

65%ofcasesdidnothaveanycomplications.ComplicationssuchasAVN,nonunion,andscrew loosening weredocumented intheremainingpatients.

Femoralheadavascularnecrosis

Inourresearch,wediscoveredtwoincidencesofAVN.Vascularinjuryfromtheinitial#NOF,inadequatereductionorfixationquality,andelevatedintracapsularpressureareallexplanationsandriskfactorsforAVN.AVNwasoriginallydocumentedin10–20percentofundisplacedfracturesand15–

35percentofdisplacedfracturesbyPhemister[24].Ratlifffounda42percent(30of70cases)incidence,Allende-Lezamareporteda25%(2of8instances),CarrelandCarrelreporteda35percent(4of11cases),IngramandBachinskyreporteda55percent(13of24cases),andMcDougalreporteda58percent(14of24cases).KBLLee[25] founda6%incidence,E.M.Toh[26]foundan11%incidence(11of100cases),andChen[27]et al. found a 67.57 percent incidence. Revascularization of the femoral headis a lengthy procedure that can take up to two years and in rare cases much longer.**Nonunion:**

In our investigation, only two cases of nonunion (10 percent incidence) weredocumented, most likely due to incorrect implant location in which one of the screws'threads did not reach the fracture site. This is a far lower rate than that found in otherstudies.

Othercomplicationsinclude:

Three individuals in our research had screw loosening but no clinical difficulties,with the exclusion of one case in which one of the three screws was removed. Noonehasever hada screw gothroughthejointcavity.

FunctionalEvaluation:

Pain:

Inourresearch,wenoticedthatfourpatients(20%)werepain-free.Onambulation,9patients(45%)hadminorpain,and5(25%)hadmildpainthatnecessitated the use of NSAIDs.Two cases had severe pain. All cases in this studyare of below 50 years, and following surgery, they looked to be more sensitive topain.Thebulkofthiscouldbemanagedwithmildanalgesicsorconservativemeasures,anddailyactivities were unaffected.

It agrees with Chen[27]et al findings, which found that practically all patientssufferedpainwithinonemonthofhavingosteosynthesiswithCCscrewsfixed.

Limpandcane use:

The majority of the cases in our study (65 percent) walked with a minor limp. In10% of patients, the limp was moderate.It's mostly due to a shift in the abductormechanism asaresultoftheneckbecomingimpingedduringweight bearing.
In our study, 65 percent of patients did not require the use of a cane to walk,20%usedone for longtreks, and10%usedone themajorityof thetime.

Totalfunctionaloutcomes

The functional results of internal fixation were assessed using a number ofcriteria. In India, we are expected to sit cross-legged & squat without much difficulty.Thepatient'shipjointshouldhaveflexion,abduction,adduction,andexternalrotation,as wellas fullflexionat the knee joint,todo this.
The patient's ability to walk with or without assistance, as well as the range ofhip motions, are the most critical elements in determining success in the westernseries. In contrast, the Indian series emphasised the ability to squat and sit cross-legged.

In our study, the final outcome at 6 months following surgery with CC screwswere analysed using theHHS system. 73 The main purpose ofthis managementwas to get them back to their pre-surgical state. At six months, 85 percent of caseshad regained their premorbid ambulatory level, and 95 percent had experiencedsignificantpainalleviation.
Thelargedifferencebetweenfunctionalandradiologicalfindingsismostlyattributable to pain and limp, which are both prominent norms in the HHS system,reducing the frequency of good and excellentresults in this research. Despite thefact that pain and limp were existing in the majority of our cases, none of them weresevere enough to necessitate a secondary surgical procedure beyond screw removalintheinstanceof screw loosening.

CONCLUSION

A review of literature on the IC # NOF was presented. Its relevant anatomy,traumaticprinciples,andbiomechanicalprincipleshaveallbeenreviewed.
Twenty cases of # NOFs treated with A.O. cannulated cancellous screws arepresentedbytheauthors.Theresultsoffurtherresearchareanalysedanddebated.
The patients were mostly in their 30s and 50s, with an average age of 30.15 formalesand34.28forfemales.Itsresultsareinlinewiththoseofotherstudies.Garden type III fractures were present in 40% of cases on radiographic evaluation.Patients having comminution of the neck's posterior cortex were excepted from thestudy.
The bulk of the patients (85%) suffered mild injuries; the majority of themslipped and fell on the same level or from considerable heights, rendering themunable to walk or stand. Anemia, diabetes, and hypertension were among the mostcommon medical disorders connected with the study. To correct the fractures in all ofthe patients, we used a lateral approach and 6.5mm A.O. cannulated cancellousscrews. Patients were advised to walk with limited weight bearing after six weeks.Withintwo weeksofsurgery, the majority ofthecaseswere discharged.
Twenty patients were followed up on to see how they were doing in terms ofradiologicalunionandfunctionaloutcomes.Internalfixationcomplicationsaresubstantiallyless commonin ourstudy than in otherstudies.
In our study, the total HHS ranged from 31.85 to 99.80 at the end of six months.Nine of the patients (45 percent) got hip scores of 90 to 100. (excellent). Six people(30%) received hip scores that ranged from 80 to 89. (good). Two (10%) had a ratingof70to79(Fair),whilethree(15%)receivedaratingoflessthan69.(poor).Asa result,85percentofthehipshadasatisfactorytoexceptionalresult,whereas15%ofthecases hada poor result.
Minor to severe pain in the hip or thigh, as well as a limp, were the chief causesof poor results in our study, and they were more common in patients who had screwloosening.Despite thefactthat thesesatisfactory findings were observedinourstudy, which is also corroborated by other studies, we did not emphasise the perfectparallel placement of screws or the quantity of screws in our study (E.M. Toh[53] et al.andK. Guruswamy etal.[28])
Toobtaintheoptimalbiomechanicalconditions,internalfixationrequiresadequatepreoperativeplanningandattentiont o surgicaldetails.
Finally, osteosynthesis with CC screws results in a united fracture with a viablehead of femur, which is always superior to a replacement and arthroplasty. Patientswho have had their treatments fail can still get a THR or hemiarthroplasty, which hasbetter results than initial hemiarthroplasty. In younger individuals, internal repair of IC# NOF is a possible alternative. The union rate is high, and the rate of mortality &morbidityarelowerthanforprosthesisreplacement.Theprocessiseasy&inexpensive,therisksareminimal,andtheear lyefficientoutcomesarepromising.

SUMMARY

Internal fixation with CC screws is a typical therapy for IC # NOF. InternalFixation with CC screws in Young Adults is still a divisive topic, with proponents onbothsides.

Internal Fixation with 6.5mm A.O. CC screws for 20 cases of femur fractureneck fractures. The functional outcomes were studied and discussed once they werefollowedupon.

The bulk of the cases were among the ages of 30 and 50, with males onaverage 30.15 years old and females on average 34.28 years old. Garden type IIIfractureswerepresentinmostofcases(40%)on radiographic evaluation. Themajorityofthefractures(85percent)wereinducedbyslighttrauma.Hypertension, diabetes,andanaemiawere themost common medicalconditions.We followed a lateral approach with all of the patients. Patients advised to partialweight bearingaftersixweeks. Within two weeksofsurgery,the majorityof thecases were discharged. Twenty cases were followed up on to see if they had healedfracture radiologicallyandhow theywere doingfunctionally.

Nine cases (45 percent) got hip scores of 90 to 100 (excellent). Six people(30%) received hip scores that ranged from 80 to 89 (good). Two (10%) had a ratingof 70 to 79 (Fair), while three (15%) received a rating of less than 69 (poor). As aresult,85percentofthehipshadasatisfactorytoexceptionalresult,whereas15%of the cases had a poor outcome. Poor outcomes following internal fixation wererelated to minor to moderate pain in the hip or thigh and a limp, and they were morecommoninpatientswhoarrivedlatetothehospitalandwereconnectedwithconcomitantdiseases.Toobtaintheopti malbiomechanicalconditions,internalfixationrequiresadequatepreoperativeplanningandattentiontosurgicaldetails.

OsteosynthesiswithCCscrewsfixationgivesthepatientaunitedfracturewitha viable head of femur, which is constantly preferable to a replacement, and it's donein a less invasive way than arthroplasty. The operational treatment is straightforwardand inexpensive, complications are less debilitating, and early functional outcomesaregood.Therateofmortality&morbidityislowerthanthoseofprostheticreplacement, withhighrates of union.

1. GullbergB,JohnellO,KanisJA.1997.world-wideprojectionsforhipfracture.

Osteoporosisint.1997;7:407-13.

2. BucholzR.W.HeckmanJ.D,Court-BrownC.M.Operativetreatmentoffractures of femoral neck. Text book of fractures in Adults, Rockwood andGreen's, 6th ed. Philadelphia, USA: Lippincott Williams and Wilkins 2006; 2:1753-1754.

3. Harris, W. H.: Traumatic arthritis of the hip after dislocation and acetabularfractures: treatment by mold arthroplastv. An end-result study using a newmethod of result evaluation. J. Bone and Joint Surg; 51-A: 737-755. June1969.

4. MukherjeeD.L.(Col),Maj.Gen.H.C.Puri.EarlyHemiarthroplastyfor freshfractures of the neck of the femur in geriatric patients. Indian Journal of Surgery1986;Vol. 48: 77-80.

5. Arwade D.J. A review of internal fixation and prosthetic replacement for freshfracturesof thefemoral neck.CliniOrthop India1987;Vol 1: 77-82.

6. Saxena P.S. and Saraf J.K. Moore Prosthesis in fracture neck of femur. IndianJournalof Orthopaedics1978; Vol 12:138-145.

7. Bavadekar A.V., Manelkar K.R. Hemiarthroplasty of the hip in the treatment ofintracapsularfracture neckofthefemur state ofthe artand anappraisal.ClinicalOrthopaedicsof India1987; Vol 1:43-52.

8. ChoudharyandMohite.Pathologyoffractureneckoffemur.ClinicalOrthopaedicsIndia1987; Vol1:45-48.

9. Austin T. Moore: The self-locking metallic hip prosthesis. JBJS 1957; 39A: 811-27.

10. NilssonB.E.Spinalosteoporosisandfemoralneckfractures.Clinc.Orthop.

1970;68:93-95.

11. Sikroski J.M. and Barrington. Internal fixation versus hemiarthroplasty for thedisplacedsubcapitalfractureoffemur:AprospectiverandomizedstudyJBJS1981;63B: 357-361.

12. John E. Kenzora et Al. Outcome after hemiarthroplasty for fracture neck offemurin elderly. Clini Orthop.1998;348:51-58.

13. D'Acry J., Devas M. Treatment of fractures of the femoral neck by replacementwith theThompsonprosthesis.JBJS1976;58B: 279-286.

14. Boyd H.B. and Salvatore J.E. Acute fractures of the femoral neck: Internalfixationor Prosthesis?JBJS 1964; 46A:1066-1068.

15. EvartsC.M.Endoprosthesisas theprimary treatmentoffemoralneckfractures.

Clinc.Orthop.1973;92:69-76.

16. Fielding J, Wilson H, Zickel R. A continuing end-result study of intracapsularfracturesof theneckofthefemur.JBone JointSurg Am 1962; 44:965972.

17. IngalhalikarV.T.,ShekarKumta.Fractureneckfemuranatomicalandbiomechanicalaspects. Clinc. Orthop. India1987.

18. Seth M.K. (Col). Stress fractures of the neck of femur. Clinical OrthropaedicsIndia1987;Vol 1:105-109.

19. Stevens J., Freeman P.A., Nordin B.E.C. and Barnett E. The incidence ofosteoporosisinpatientswith femoralneckfracturesJBJS1962;44B:520-527.

20. HincheyandDay.PrimaryprostheticreplacementinfreshfemoralneckFractures.JBJS1960;42B:633-640.

21. Stinchfield F.E., Cooperman B. and Shea C.E. Replacement of the femoralheadbyJudetorAustin MooreProsthesis.JBJS1957;39A: 1043-1058.

22. SavastanoA.A.etal.Treatmentoffracturesoftheneckfemurwithintramedullarystemprosthesis.Archievesofsurgery1957;75:156-1595.
23. Delkel and S.L Neissman. Immediate prosthetic replacement in fracture neck ofthefemur. JBJS1976;58B:380.
24. PhemisterDB.Repairofboneinthepresenceofasepticnecrosisresultingfrom fractures, transplantations, and vascular obstruction. J Bone Joint Surg1930;12:769-787.
25. KBL Lee, TS Howe, HC Chang. Cancellous Screw Fixation for Femoral NeckFractures: One Hundred and Sixteen Patients. Ann Acad Med Singapore 2004;33:248-51.
26. E.M.Toh,V.Sahnib,A.AcharyaandJ.S.Denton;Managementofintracapsular femoral neck fractures in the elderly; is it time to rethink ourstrategy?Injury.Volume35,Issue 2,February2004,Pages125-129.
27. Chen, Wei-Chih, Yu, Shang-Won, Tseng, I-Chuan, Su, Juin-Yih, Tu, YuanKun,Chen,Wen-Jer;TreatmentofUndisplacedFemoralNeckFracturesintheElderly. Journal of Trauma-Injury Infection & Critical Care: May 2005 - Volume58 -Issue 5-pp1035-1039.

28. K.Gurusamy,M.J.Parker,andT.K.Rowlands;Thecomplicationsofdisplaced intracapsular fractures of the hip: The Effect of Screw Positioning andAngulation on Fracture Healing. Journal of Bone and Joint Surgery - BritishVolume,2005;Vol 87-B, Issue 5, 632-634.
29. K.Gurusamy,M.J.Parker,andT.K.Rowlands;Thecomplicationsofdisplaced intracapsular fractures of the hip: The Effect of Screw Positioning andAngulation on Fracture Healing. Journal of Bone and Joint Surgery - BritishVolume,2005;Vol 87-B, Issue 5, 632-634.
30. Seth M.K. (Col). Stress fractures of the neck of femur. Clinical OrthropaedicsIndia1987;Vol 1:105-109.
31. Stevens J., Freeman P.A., Nordin B.E.C. and Barnett E. The incidence ofosteoporosisinpatientswith femoralneckfracturesJBJS1962;44B:520-527.