|| ISSN(online): 2589-8698 || ISSN(print): 2589-868X ||
International Journal of Medical and Biomedical Studies
Available Online at www.ijmbs.info
NLM (National Library of Medicine ID: 101738825)
Index Copernicus Value 2019: 79.34
Original Research Article
Volume 5, Issue 1; January: 2021; Page No. 391-393

TO ASSESS THE COMPLICATIONS ASSOCIATED WITH THE USE OF THESE TREATMENT MODALITIES OF INTERNAL FIXATION OF DISTAL FEMORAL FRACTURES USING NEER'S SCORING SYSTEM.

Dr. Manish Sharma[1] & Dr. Rishi Gupta[2]
[1]Assistant Professor, Department of Orthopaedics, Amaltas Institute of Medical Sciences, Dewas, M.P.
[2]Assistant Professor, Department of Orthopaedics, Index Medical College Hospital & Research Centre, Indore, M.P.

Article Info: Received 13 December 2020; Accepted 25 January 2021
DOI: https://doi.org/10.32553/ijmbs.v5i1.1782
Corresponding author: Dr. Rishi Gupta
Conflict of interest: No conflict of interest.

Abstract
The was study conducted in Department of Orthopedics of Index Medical College Hospital and Research Center, Indore, M.P. Patients with distal femoral cracks, conceded in the emergency clinic were dealt with utilizing different methods of inner obsession and followed up over a time of a half year to one year and their practical result assessed.
DCS group had highest number of non-union and deep infection rates; DFN group needed maximum number of secondary surgical procedures. The main disadvantage noticed in this study with locking plates is high fixation failure rates which can be minimized by proper technique and follow up. Further large scale, long term prospective studies are required to substantiate the pros and cons of locking plates in their use in the treatment of distal femoral fracture.
Keywords: complications, modalities, femoral & fractures.

Introduction

Supracondylar space of femur is characterized as zone between femoral condyles and intersection of metaphysis with shaft of femur. This region comprises of distal 9-15cms of femur. At the intersection of distal femoral diaphysis and the metaphysis, the femur flares into two bended condyles[1]. Anteriorly, the condyles are to some degree straightened, which makes a bigger surface for contact and weight transmission. The condyles project next to no before the femoral shaft except for extraordinarily so behind. The front surface, between the two condyles, has a shallow articular wretchedness for the enunciation with the patella[2]. The contact surface of the patella is gotten principally from the horizontal femoral condyle. The back surface, between the two femoral condyles, is isolated by profound between condylar fossa.

Numerous grouping frameworks have been proposed including those of Neer's, Stewert's, Schatzker's, Tile's, Seinsheimer's and Muller's. The arrangement of distal femoral cracks portrayed by Muller et al and extended in the AO/OTA order is broadly utilized in deciding treatment and prognosis[3]. It depends on the area and example of the crack and considers all breaks inside the transepicondylar width of the knee.

Type A breaks are essentially extra-articular and include the distal shaft just with differing levels of comminution; Type A1 is a straightforward two section crack, A2 with a metaphyseal wedge and A3 with metaphyseal communition[4]. Type B breaks are condylar cracks; type B1 is a sagittal part of the sidelong condyle, B2 is a sagittal part of the average condyle, and B3 is a coronal plane crack. Type C cracks are T and Y condylar breaks; type C1 breaks have no comminution, C2 cracks have a comminuted shaft crack with two head articular parts, and C3 cracks have intra-articular communition.

Material & Method

The Study was conducted in Department of Orthopedics of Index Medical College Hospital and Research Center, Indore, M.P. from May 2017 to April 2018 Patients with distal femoral cracks, conceded in the emergency clinic were dealt with utilizing different methods of inner obsession and followed up over a time of a half year to one year and their practical result assessed.

After standard parallel openness of the distal femur, Kirschner wires and braces are utilized to anatomically lessen and temporarily fix articular breaks. All coronal or sagittal split breaks are inside fixed with slack screws or Herbert screws, taking consideration to subset any screws set through ligament. Since the DCS likewise creates intercondylar pressure, an intercondylar crack requires just a single extra 6.5-mm slack screw. Plan the arrangement of this screw so it doesn't meddle with ensuing addition of the DCS.

Arrangement wires set better and distal than the femoral condyles. Kirschner wire embedded 2 cm from the joint line. Picture strengthening used to guarantee that position of this Kirschner wire is corresponding to the knee joint pivot and that it doesn't project medially. Then again, the DCS direct positioned along the sidelong cortex of the distal femur (after anatomical decrease of the distal femur) and the wire embedded under roentgenographic control. The situation of the guide should be assessed before the wire is embedded; in any case the DCS guide may put the guide wire in an imperfect position.

Inclusion Criteria

1. Age group between 21-70 years

2. The fracture groups included are:

Extra-articular group {all types A1, A2 and A3 are included are included as a single group}

Intra-articular group {types C1 and C2 are included as a single group}

Exclusion Criteria

1. Associated injuries such as tibial plateau fractures, patella fractures and femoral shaft fracture

2. Pathological fractures and Compound fractures.

3. Patients with associated preoperative nerve or vascular injury

Results

Table 1: Outcome distribution (Measured by Neer's functional criteria)

S. No.	Outcome Assessment	No Of Patients With Final Score> 70	% Of Patients With Final Score> 70
1	Excellent	10	12.5%
2	Satisfactory	32	40%
3	Unsatisfactory	26	32.5%
4	Failure	12	15%

In our study, we found 40% with Satisfactory & 32.5% in Unsatisfactory.

Table 2: Outcome According To Age Group, Fracture Group and Implant Used

Age Group	Fracture Type	Implant Used	No And % Of Pts With Neers Score Above 70
Patients With Age More Than 40 Years	Extra-Articular	DCS	2, 33%
		L-CBP	4, 67%
		DFN	2, 34%
	Intra-Articular	DCS	2, 33%
		L-CBP	4, 50%
		DFN	0, 0%

Table 3: Distribution of Complications

S. No.	Complication Rates	DCS	Locking CBP	DFN
1	No Of Non Unions	2, 6.5%	1, 3.3%	1, 4.2%
2	No Of Fixation Failure	3, 11.5%	4, 13.3%	1, 4.2%
3	No Of Deep Infections	2, 8.3%	2, 6.6%	0, 0%
4	Secondary Surgical Procedures	3, 11.5%	3, 10%	8, 24%

Discussion

Nonunion in the distal third of femur is and ought to be generally uncommon for the bone is basically cancellous and has an astounding vascular inventory with great nearby osteogenic properties[5&6]. The rate of this inconvenience appears to fluctuate as indicated by the strategy with which the break was dealt with. In two huge arrangement (Neer et al, 1967) [7] including both open and shut techniques for treatment, there was nonunion in 19 of 315 (6.5%) and 16 of 110 (15%) cases individually. Consequently all types of treatment have had nonunion as a huge intricacy. In our investigation, normal non-association rate was most elevated in DCS bunch (11.5).

The critical dreariness coming about because of post-employable contamination of supracondylar cracks are all around reported (Moore et al, 1987) [8]. Least rate disease was Giles et al (1982) with 5 open cracks of 26 had a contamination pace of 0%, trailed by Pritchett from Arizona announced a 5.2% rate and Mize et al (1982)23 a 6.6% profound contamination rate. In our examination, normal disease rate was most elevated in DCS bunch (8.3%), trailed by L-CBP bunch (6.3%).

Disappointment of obsession was most elevated in L-CBP bunch. In a reflectively study assessed the instances of every one of the 46 patients who had been dealt with essentially with the LCP condylar plate for a distal femoral break during a three year time span at their clinic, and we recognized six embed failures[9]. They presumed that absence of appropriate procedure was the main contributing component.

Most noteworthy number of optional surgeries was done in DFN bunch. Four patients required embed expulsion following gripes of knee torment principally because of embed projection and impingement in knee joint. Four patients required dynamisation later in follow up to accomplish association.

Conclusion

DCS group had highest number of non-union and deep infection rates; DFN group needed maximum number of secondary surgical procedures. The main disadvantage noticed in this study with locking plates is high fixation failure rates which can be minimized by proper technique and follow up. Further large scale, long term prospective studies are required to substantiate the pros and cons of locking plates in their use in the treatment of distal femoral fracture.

References

1. Johnson Kd, Hicken G- Distal femoral fractures Orthop Clin North Am 1987; 18: 115-132.
2. Butler MS, Brumback RJ, Ellison TS, Poka A, Bathon GH, Burgess AR- Interlocking intramedullary nailing for ipsilateral fractures of the femoral shaft and distal part of the femur J Bone Joint Surg 1991; 73A: 1492-1502.
3. Cassebaum WH. Operative treatment of articular fractures J. trauma ,1969 9: 915-925.
4. Charnley J- The closed treatment of common fractures 3rd ed. Edinburgh, E and S Livingstone, 1961.
5. Merchan ECR, Maestu PR, Blanco RP-- Blade-plating of closed displaced supracondylar fractures of the distal femur with the AO system J Trauma 1992; 32: 174-178.
6. Giles JB, Delee JC, Heckman JD, Keever JE- Supracondylar-intercondylar fractures of the femur

treated with a supracondylar plate and lag screw J Bone Joint Surg 1982; 64A: 864-870.
7. Neer CS II, Grantham SA, Shelton ML- Supracondylar fracture of the adult femur J Bone Joint Surg 1967; 49A: 591-613.
8. Giles JB, Delee JC, Heckman JD, Keever JE- Supracondylar-intercondylar fractures of the femur treated with a supracondylar plate and lag screw J Bone Joint Surg 1982; 64A: 864-870.
9. W Michael & Chapman, fracture distal end of femur. J Bone Joint Surg vol.81,Sept.1999.