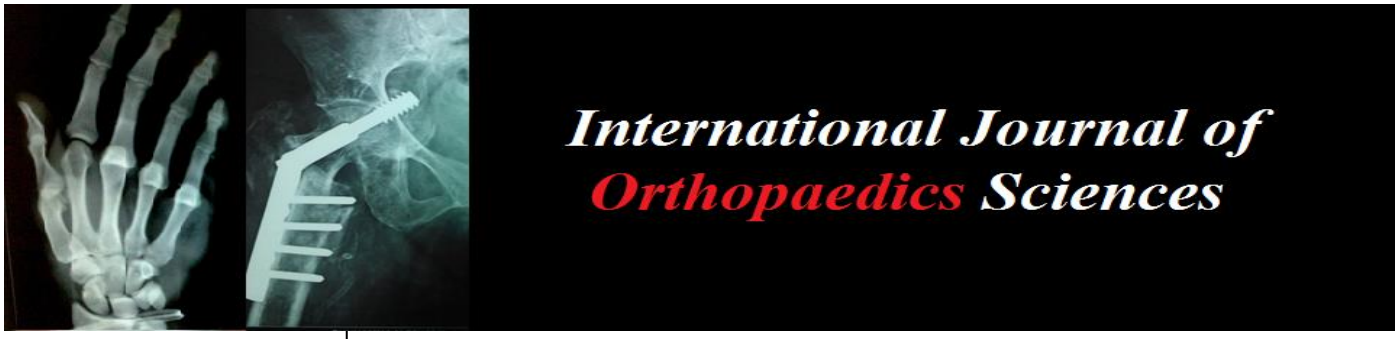

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Functional outcome of upper tibial fractures treated with upper tibial locking and non-locking plates: A retrospective study from 2006 till 2017-ten year follow up

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Abstract
Our aim was to identify the best line of treatment both functionally and radiologically on a long term basis for upper tibial fractures treated with locking and non locking plates over a period of ten years as a retrospective study all patients who were operated for upper tibial fractures were called, and those who reported were classified as patients who underwent locking plate and patients with non-locking plates. All patients were studied both clinically and radiologically to assess the timing of total weight bearing, infection, rom, etc.

Keywords: Upper tibial fractures, locking plates, non-locking plates

Introduction
For long number of years the upper tibial fracture were treated conservatively and latter to upper tibial plating, (non locking)and found that the upper tibia widens on load bearing and subsequently locking plates now play a major role in use in osteoporotic fractures, and prevent screw loosening and upper tibia widening. And hence to understand the correct method of treatment we planned a retrospective study over a period of 10 years.

Aim
Our aim was to study the functional outcome of locking and non-locking plates treated for upper tibial fractures.

Materials and Methods
All patients reported after and operated for upper tibial fractures from 2006 till 2017 were taken up for the study. Total number of cases278.treated with non-locking plates 132 and locking plates were 146. All patients were called and out of 278 cases reported were 202, of which non-locking was 82 and locking was 120. All patients were asked to fill the proforma regarding functional outcome after surgery. Type of fracture line of treatment and PWB, TWB return to function were studied.

Results
Only patients treated for upper tibial fractures and reported to us were taken up for the study-202 patients. Schatzker classification was used. Of which Type 1-38pts, Type 2-38, Type 3-41, Type 4-38, Type 5-24, Type 6-13 of which non-locking and locking were classified as per table, male female and side as table 2, grades of injury % as table 3, weight bearing PWB, TWB as table 3, rom in table 3, were analysed.

Discussions
We found that locking platesdone of 120 patients. Nonlocking was 82. With percentage of 59.40% locking and 40.6% for non-locking of locking 120 patients of locking plates table -1 shows male and female numbers and percentage., males were 57patients and schatzker type1-13 patients-10.8%, type2-8(6.6%), type3-10(8.3%), type4-13(10.8%), type5-8(6.6%), type 6 of

Schatzker Type 1-23.76%, Type 2-18.81%, Type 3-24.39%, Type 4-18.81%, Type 5-11.8%, Type 6-6.43%. In locking out of 120 patients 47% were male and female 53%, in non-locking males were 45.1% and female 64.9% percentage as per table 1 and 2 for various types

Conclusion

In our study we found that locking plates gave good results like early weight bearing early mobilization early wound healing less infection. Since it is a retrospective case further study to be done to evaluate our results.

Tabular column and clinical pictures attached

Table 1: Showing numbers of locking plate applied for fracture uppertibia patients (120),and patients who underwent non locking plates (82 patients).male, female, number of patients, there percentage, inrelation to schatzker types1 to 6

Locking 120(59.4)				Non-locking82(40.6)			
Male	**%**	**Female**	**%**	**Male**	**%**	**Female**	**%**
Scha-type 1-13	10.8%	12	10%	10	12.5%	13	15.8%
Type2 -8	6.6%	11	9.16%	5	6.09%	14	17.0%
Type3-10	8.3%	20	16.6%	7	5.83%	11	13.4%
Type-4 -13	10.8%	10	8.3%	7	5.83%	8	9.7%
Type-5-8	6.6%	6	5%	6	8.78%	4	4.8%
Type-6-5	4.16%	3	2.5%	2	2.5%	3	3.65%

Table 2: Shows schatzker types 1to 6, number of patients, number of patients who underwent locking plate for upper tibial fracture and number of patients who underwent nonlocking plates

S. No	Number of patient	Non-locking	Locking
1	48	23	25
2	38	19	19
3	41	10	31
4	38	15	23
5	24	10	14
6	13	5	8
Total	202 (100%)	82 (40.5%)	120 (59.4%)

Table 3: Shows that rom in locking plates were very good as compare to non locking plates of all grade of schatzker fractures, and early weight bearing in locking plates

S. No	Name	Grade 1		Grade 2		Grade 3		Grade 4		Grade 5		Grade 6	
1	(a) Non Locking	PWR	TWR	PWR	TWR	PWR	TWR	PWR	TWR	PWR	TWR	PWR	TWR
		3W	3M	3W	3M	6W	3M	6W	4 ½ M	6W	4 ½ M	6W	4 ½ M
	(b) ROM	0-90		85		86		80		80		85	
2	(a) Locking	Post	6W	Day 1	6w	Day 1	6w	Day 1	6w	Day 1	6w	Day 1	6w
	(b) ROM	120		120		110-120		110		116		11	

Table 3 shows that rom in locking plates were very good as compare to non locking plates of all grade of fractures, and early weight bearing in locking plates.

Clinical pictures and X-Ray

1. Treated with locking plate and screw.

Fig 1: Treated with locking plate and screw, showing full flexion

Fig 2: Full extension after locking plating

Locking AP Lateral Locking Plate Lateral

2. Non locking plate and screws in Full Flextion & in Full Extention

Fig 3

Fig 4

Fig 3 & 4: Patients with non locking plate and screws in full flextion & in full extention note decreased rom

With Non-locking plate

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