

The Prevalence Of: Neglected Musculoskeletal Injuries, In Bareilly Region

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Abstracts: Background: Musculoskeletal injuries needing urgent care are often amongst the commonest conditions at the first referral health facilities. They are initially being treated by non-specialist doctors, nurses and paramedics. By the time the patients reach a specialized tertiary care centre they have malunited or ununited limb bone fractures or established infected non unions or non-unions with broken implant or mal positioned implants. **Objective:** to find the prevalence of neglected musculoskeletal injuries in the region. **Methods:** A retrospective study was done at one of the tertiary care hospital in Bareilly Uttar Pradesh. The records of all the patients above 18 years who had musculoskeletal injury of more than one month duration and the patients below 18 years who had musculoskeletal injury more than three weeks duration during the period of year 2013 were retrieved. The necessary information was collected on semi structured schedule. Data Analysis was done with help of SPSS version 10.0 Statistical Software. **Results:** Total number of neglected musculoskeletal injuries received was 197 out of which males were 79 % and females 21 %. There were 62% patients from rural background and remaining 38% from urban. On evaluation of monthly data it was found that the maximum numbers of neglected musculoskeletal injury cases, 29 were admitted in the month of July, and minimum 2 in the month of September. Age wise maximum number of cases was in the age group of below eighteen 51 cases, followed by age group between forty and forty nine, 39 cases and the least in age group above seventy, 6 cases. In the extremities lower limb was more involved as the score reached 109 cases, while upper limb had 68 and spine 20. **Conclusion:** There is an urgent need to address the issue of neglected musculoskeletal injuries for which a manifold approach is needed at all levels. [Narula R NJIRM 2014; 5(5) :64-69]

Key Words: neglected, musculoskeletal, injuries, non-union.

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Introduction: Injuries are major cause of death and disability globally. Mortality rates from injury are higher in low and middle income countries compared with high income countries due to increased use of motorized transport and less developed roads and trauma care system¹.

For every person who dies from injury, many more are injured resulting in temporary or permanent disability. The combined rates of extremity injury from falls and road traffic accidents ranged from 1000 to 2600 / 100000 per year in low and middle income counties compared to 500 / 100000 per year in high income counties². Musculoskeletal injuries needing urgent care are often amongst the commonest conditions at the first referral health facilities. Often these facilities lack specialists such as orthopaedic surgeon, trauma surgeon, general surgeon, anaesthesiologist, emergency and critical care physician. They are initially being treated by non-specialist doctors, nurses, clinical officers,

technicians and paramedics. Such persons working in difficult, isolated circumstances with limited equipments have limited capabilities for urgent referral to more specialized centres. By the time the patients reach a specialized tertiary care centre they have malunited or ununited limb bone fractures or established infected non unions or non-unions with broken implant or mal positioned implants. Each injury when reported for the first time would have bony and soft tissue problems³.

Material and Methods: The present retrospective study was carried out at one of the tertiary care hospital in Bareilly Uttar Pradesh, after approval from institutional ethical committee, with the objective to find the prevalence of neglected musculoskeletal injuries in this region. Study period was from January 2013 till December 2013. Target population was the patients admitted in the orthopaedic ward during this period. Unit of study were all the patients above 18 years who had musculoskeletal injury of more than one month

duration and the patients below 18 years who had musculoskeletal injury more than three weeks duration with the following exclusion criteria: pathological fractures, bone tumours, poly arthritis, endocrinological disorders. Congenital disorders, Perthe's disease, avascular necrosis, developmental disorders, degenerative diseases.

Data Collection: the records of all the patients above 18 years who had musculoskeletal injury of more than one month duration and the patients below 18 years who had musculoskeletal injury more than three weeks duration during the period of one year from January 2013 till the end of December 2013 were retrieved. The necessary information was collected on semi structured schedule. Information collected included their name, age, sex, religion, address, date of admission, discharge and operation with images if any, history of present illness, diagnosis, duration of neglect, treatment done along with their central registration numbers.

Data Analysis: After covering all the target population the data was coded and entered in SPSS version 10.0 Statistical Software. The data base so prepared was analyzed and the results were transferred to predesigned classified tables prepared according to the aims and objectives of the study. Valid inference was drawn and the results were discussed with the available studies.

Result:Total number of neglected musculoskeletal injuries received in year 2013 was 197 out of which males were 156 (79 %) and females 41 (21 %).There were 123 (62%) patients from rural background and remaining 74 (38%) from urban. On evaluation of monthly data it was found that the maximum numbers of neglected musculoskeletal injury cases, 29 (15%) were admitted in the month of July, and minimum 2 (1%) in the month of September. Not a single month was immune to these types of cases. There was a constant pouring throughout the year (Table 1).

Table1: Showing Number Of Neglected Musculoskeletal Injuries Received In Each Month Of Year 2013, Monthly.

S.N.	Month	Number / % of cases
1	January	09 4.56

2	February	17	8.62
3	March	25	12.69
4	April	15	7.61
5	May	11	5.58
6	June	24	12.18
7	July	29	14.72
8	August	19	9.64
9	September	02	1.01
10	October	18	9.13
11	November	09	4.56
12	December	19	9.64
Total		197	

Age wise maximum number of cases was in the age group of below eighteen 51 cases (26%), followed by age group between forty and forty nine, 39 cases (20%) and the least in age group above seventy, 6 (3%) cases (Table 2).

Table: 2 Showing Numbers Of Neglected Musculoskeletal Injuries Received According To Their Age Groups.

S.N.	Age groups	Number / % of cases
1	1-18	51 25.88
2	19-29	33 16.75
3	30-39	22 11.16
4	40-49	39 19.79
5	50-59	30 15.22
6	60-69	16 8.12
7	70-79	05 2.53
8	80 +	01 0.50
Total		197

In the extremities lower limb was more involved as the score reached 109 (55%) cases, while upper limb had 68(35%) and spine 20(10%) (Table3).

Table 3: showing number of neglected musculoskeletal injuries received for extremities and spine.

S.N.	Distribution	Number / Percentage
1	Upper Limb	68 34.51
2	Lower Limb	109 55.32
3	Spine	20 10.15
Total		197

Discussion: Non-union is a state in which all the healing processes have come to a halt as judged by clinical and roentgen graphic evidence beyond the stipulated period of healing for a particular fracture. Definition of non-union is largely subjective and imprecise. A fracture of the shaft of a long bone should not be considered a non-union until at least 6 months after the injury. A fracture of the femoral neck can sometimes be defined as a non-union even after only 3 months especially if it had displaced, or even can be predicted on day 1, if it is not properly reduced. Inadequate fixation of a fracture by a plate or by nail is a common cause of non-union⁴. We received total 51 cases of non-unions which constituted to 25 % of all the cases of neglected musculoskeletal injuries received by us which made enough significance. Inadequate fixation was a frequent reason. In cases of fracture neck femur of young adult's fibula proved to be a wonder bone for us, as this was utilized as bone graft, gave good results and natural hip joint could be preserved (Figure 1).

Figure 1: 1a-AP View Of Right Hip Joint, Showing Failed Primary Fixation In Case Of A Fracture Neck Femur Two Months Old In A Young Adult. 1b- AP View Of Same Hip, Post Op At Three Months Follow Up.



Infective non-union has been defined as a state of failure of union and persistent infection at the fracture site for 6-8 months. This can develop after an open fracture, after a previous surgical intervention with or without an implant, or as sequel to chronic haematogenous osteomyelitis. The open fracture is the most common cause and tibia is the most commonly involved bone. This is

due to the fact that open tibial fractures frequently result from high velocity trauma, deteriorating road conditions, increasingly sophisticated techniques in emergency limb salvage of complex limb injuries, and a continued over enthusiasm for operative fracture surgery⁵. Out of 51 cases of non-unions received by us 19 cases (10%) were of infective non-unions.

When informed of the duration of the rehabilitation after bony debridement and the possible need for additional reconstructive procedures, some patients may choose amputation rather than limb reconstruction. In spite of all these considerations, limb salvage cannot be advocated for all the patients. Inadequate vascularity of the extremity to support wound healing (peripheral vascular disease, diabetes mellitus), previous arterial injury that would complicate micro vascular reconstruction, compartment syndrome, tibial nerve injury, severe crushed injury with a mangled foot, presence of a Charcot joint and compromised host are the usual contraindications, and a primary amputation would be preferable⁶. In our scenario we happen to receive shocking cases of neglect where amputation had to be done due to gangrene. Patient 8 years old, sustained simple fracture shaft of femur that was subsequently treated by quacks by tight bandages and plastering, developed gangrene by the time they reported us (Figure 2).

Figure 2: 2a-Showing Xray AP View With Fracture Shaft Of Left Femur. 2b: Gangrene Left Lower Limb. 2c: After Mid Thigh Amputation.



Antibiotic loaded cement can be placed as intramedullary rod after nail removal. This will not only supply adequate local concentration of antibiotics but also provide temporary stability at non-union site. The rods can be custom made at the time of surgery using different chest tubes as mold and embedding a 3 mm beaded wire in the cement. The rods can be removed and replaced with a definitive metal intramedullary nail with or without bone grafting. The results, though few reported, have been encouraging⁷. In the selected 12 cases out of total 19 local deliveries of antibiotics through cemented beads was done by us after debridement.

Figure 3: 3a-showing X-ray AP view of right femur with malunion of fracture shaft femur in an adolescent. 3b: gross clinical deformity. 3c: post op x-ray after open reduction and intramedullary nailing.



Fracture neck of femur is a common skeletal injury among old people. Its incidence is now on the rise in younger population because of road traffic accidents when it may be a part of multiple fractures or polytrauma. In spite of great advancements in the management of skeletal injuries fracture neck femur continues to be a problem for the orthopaedic surgeon. Because of bony configuration of the upper end of femur and action of various groups of muscles acting on the hip joint, this fracture is subjected to a very high degree of shearing strain. Thus displaced fracture of neck of femur does not unite unless it is anatomically reduced and internally fixed. The

problem gets further complicated if the fracture remains untreated for more than a few days. From practical point of view if a fracture remains untreated for three weeks or more it is designated as neglected fracture because internal fixation alone has a very high failure rate. In order to achieve union of fracture, internal fixation has to be combined with some type of bone graft or osteotomy. In western countries such cases are treated by total hip arthroplasty. Because of the life style and religious customs, people in India are required to squat or sit in crossed leg position. The movements required to adopt these postures are neither possible nor permissible in a total hip arthroplasty. It is therefore desirable that the natural hip joint should be preserved in young adults⁸. In cases of fracture neck femur of young adult's fibula proved to be a wonder bone for us, as this was utilized as bone graft, gave good results and natural hip joint could be preserved (Figure 1).

Neglected trochanter and subtrochanteric fractures constitute a special group of injuries and may be a leading cause of death and disability in proximal femoral fractures in third world countries. Although untreated trochanteric fractures unite invariably, the mortality and morbidity associated with prolonged recumbence in elderly is very high. Many of the fractures in the developing countries present late because of mismanagement by bone setters and delayed referrals³. Osteoporosis, malunion, non-union, shortening, thromboembolic disease, decubitus ulcers and associated medical problems make the treatment challenging. Varus malunion and non-union is the most frequent biomechanical complication following treatment of unstable trochanteric fractures. Varus displacement results in limb shortening, gluteal muscle limb imbalance, limp and overloading of knee joint and lumbar spine. All this is accompanied by pain and later by the development of osteoarthritis of lumbar spine⁹. Total six cases in age group of above seventy received by us were all of these types. Apart from this age group there were ten more cases making a total of sixteen that is 8 % of all the neglected musculoskeletal injuries.

The reported incidence of neglected spinal injuries with or without neurological deficits varies from 4 to 30 %. As neglected injuries carry serious medical

and medico legal consequences, there is a tendency to under report such incidences and the true incidence may be higher¹⁰. Poonnoose et al reported 52 cases of missed spinal cord injury and out of these 19 (36%) occurred in the thoracolumbar spine. Though the incidence of missed injuries is more common in the cervical spine, secondary neurological deficits and progressive deformity are more frequent in the thoracolumbar spine, because of the smaller diameter of the spinal canal in this area¹¹. In all polytrauma patients, a conscious effort must be made to look for spinal injuries and the spine should not be cleared until and unless relevant radiographs and further investigations are completed¹². In our series we received total twenty cases (10%) of neglected spinal injuries out of documented 197 cases. Out of these seventy five percent cases were of adult age group and males. Maximum number of cases: nine, had involvement of lumbar spine, followed by cervical spine: six and thoracic: five.

Supracondylar fracture of the humerus is a common childhood injury. Between 10 to 20 % cases report late in developing countries. The incidence varies between different geographic areas. A large proportion of these cases are seen in semi urban or rural hospitals where the resources and the expertise available are limited. In these situations the methods of treatment should be practical and successful from both the patient and doctor's viewpoint¹³. It is more appropriate to classify these fractures according to the delay in seeking treatment, rather than the extent of displacement. Group 1: the delay is between 2 and 7 days. Group 2: the delay is longer. The time limits are based on clinical observations and not on any scientific or experimental evidence. Within 48 hours the elbow is swollen and after a week traction is not very effective to correct the displacement¹⁴. Out of total 51 cases, in the age group of below 18, 22 cases (11%) were of neglected supracondylar fractures.

Post traumatic deformities after diaphyseal fractures also are seen in children and the principals of treatment remain the same. When indicated, osteotomy, one stage correction of the deformity, and fracture stabilization using a plaster

hip spica, IM nail or plate osteosynthesis is the treatment of choice¹⁵. One stage correction of deformity was done in neglected diaphyseal fracture shaft femurs in five cases (Figure 3).

Conclusion: This article is an attempt to highlight the menace of neglected musculoskeletal injuries by noting its prevalence. There is an urgent need to address this issue, for which a manifold approach is needed at all levels. Then only we can hope that in future by the time the patient's are reaching a specialized tertiary care centre they have not malunited or ununited limb bone fractures or established infected non unions or non unions with broken implant or mal positioned implants.

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Conflict of interest: None

Funding: None
