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Research Article

CLINICAL SPECTRUM OF PATHOLOGICAL FRACTURES

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Abstract:

Objective: To determine the clinical spectrum of pathological fractures.

Patients And Methods: In this tertiary care two years hospital based cross study (2015-2017) explored 50 cases of pathological fractures treated. All patients with the fractures occurring spontaneously or with trivial trauma, suffering from tumors or tumorous condition, patients having hereditary condition like osteogenesis imperfect, the fractures in patients with associated pathological process like infection and the fractures in patients with nutritional deficiency and hormonal imbalance. Detailed present, past, family and personal history were obtained. General, systemic, and local examination were carried out. Relevant blood and urine investigations were done. X-ray of the affected bone and skeletal survey were done. CT scan was made available whenever necessary. Ultrasonic heel densitometer was carried out when required whereas the frequency / percentages (%) and means \pm SD computed for study variables.

Results: During two year study period total fifty patients having pathological fractures were explored and study. The mean \pm SD for age (yrs) of population was 65.32 ± 6.31 . The common etiologies identified as primary bone tumors 10 (20%) and osteoporosis 17 (34%) while regarding the treatment conservative observed in 32 (64%) and surgical intervene 18 (36%).

Conclusion: Osteoporosis was the most common cause of pathological fracture followed by tumor was the second most common.

Keywords: Pathological fracture, osteoporosis and bone tumour

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INTRODUCTION:

A pathological fracture is a fracture of an abnormal bone. Typically, the fracture occurs during normal activity or with minor trauma, as the abnormality of the bone reduces the strength of the bone and predisposes it to mechanical failure with minimal stress [1]. A patient who presents with a fracture occurring spontaneously or after minor trauma or who has an unusual fracture pattern, has had several recent fractures, or has a history of primary malignancy should alert the surgeon to the presence of a predisposing pathologic condition. The pathologic condition may be osteoporosis, osteomalacia, Paget's disease, osteopetrosis, osteogenesis imperfecta, fibrous dysplasia, osteomyelitis, primary bone tumor or a metastatic deposit of a carcinoma [2]. A detailed history, thorough physical examination and proper investigations are required for establishing the diagnosis. The management of such fractures may be dramatically altered by the associated pathological conditions [3]. Initial management, well planned and well executed dramatically improves a patient's life whereas treatment that is not well planned and carried out condemns the patient to far more difficulty [4]. An orthopaedic surgeon needs to work with the patient, radiologist, pathologist, oncologist, and pain management specialist to provide the patient with optimal treatment and the best life possible.

PATIENTS AND METHODS:

In this tertiary care 2 years hospital based cross study (2015-2017) explored 50 cases of pathological fractures treated. All patients with the fractures occurring spontaneously or with trivial

trauma, suffering from tumors or tumorous condition, patients having hereditary condition like osteogenesis imperfecta, the fractures in patients with associated pathological process like infection and the fractures in patients with nutritional deficiency and hormonal imbalance. All patients were treated as inpatients. Patients with fractures where a clear underlying pathology could not be established, impending pathological fractures were excluded from the study. Detailed present, past, family and personal history were obtained. General, systemic, and local examination were carried out. Relevant blood and urine investigations were done. X-ray of the affected bone and skeletal survey were done. CT scan was made available whenever necessary. Ultrasonic heel densitometer was carried out when required. Biopsy also was done when required. Initially the cases were treated with immobilization of the affected limb, traction to the affected limb, analgesics and antibiotics. The final treatment varied with the cause. Immobilization with splints, plaster of Paris, internal fixation, amputation, and disarticulation was carried out where required. Chemotherapy and radiotherapy was given for the tumorous condition at specialized centers. The data was collected on pre-designed proforma and analyzed in SPSS to manipulate the frequencies and percentages.

RESULTS:

During two year study period total fifty patients having pathological fractures were explored and study. The mean \pm SD for age (yrs) of population was 65.32 ± 6.31 . The demographical and clinical profile of study population is presented in Table 1.

TABLE 1: THE DEMOGRAPHICAL AND CLINICAL PROFILE OF STUDY POPULATION

Parameter	Frequency (N=50)	Percentage (%)
AGE (yrs)		
30-39	04	8.0
40-49	21	42
50-59	18	36
60-70	07	14
GENDER		
Male	16	32
Female	34	68
RESIDENCE		
Urban	31	62
Rural	19	38
PATHOLOGICAL FRACTURE		
Primary bone tumors	10	20
Osteoporosis	17	34
Infection	06	12
Congenital disorders	04	8.0
Secondary bone tumors	07	14
Nutritional disorders	03	6.0
Hormonal imbalance	03	6.0
SITE		
Femur	18	36
Humerus	10	20
Metatarsal	01	2.0
Femur + Ulna + vertebra	05	10
Vertebra	07	14
Humerus + Ulna	03	6.0
Tibia	06	12
TREATMENT		
Conservative	32	64
Operative	18	36

DISCUSSION:

Osteoporosis was the commonest cause of pathological fracture in the present study. Most modern publications have quoted 90% of the pathological fractures to be due to tumors and osteoporosis and only 10% due to other causes [5]. Skeletal distribution showed that femur was the most commonly involved bone to be fractured in osteoporosis. Pain relief and restoration of function was noted to be better with surgical management when compared to non-operative management. Primary bone tumors were the second most common cause of pathological fracture while the metastatic bone tumor was the third most common cause of pathological fracture in the present study. Three cases of pathological fracture due to osteomalacia were studied. One patient had fracture neck femur and cause of the fracture was chronic

consumption of antiepileptic drugs. He underwent hemiarthroplasty with gradual reduction in the dosage of anti-epileptics. The other patient had fracture shaft humerus. In such population supplements of calcium and vitamin D were given in their diet. At 6 months follow up both the fractures had united. Chronic osteomyelitis involved femur and was treated conservatively by mobilization and drainage of abscess. Appropriate antibiotics and anti-tubercular drugs were used. Pain relief, restoration of function, decreased hospitalization and facilitation of nursing care was noted to be better with surgical management as compared to non operative management [6, 7].

CONCLUSION:

Osteoporosis was the most common cause of pathological fracture followed by tumor was the

second most common. Females were found to be more commonly affected than males and this was due to the higher incidence of osteoporosis in post menopausal women. Thus regular follow-up and sometimes multiple surgical interventions in the proper management of pathological fractures and the treatment of the original condition have priority as far as management is concerned.

REFERENCES:

1. Sheth RD, Gidal BE, Hermann BP. Pathological fractures in epilepsy. *Epilepsy & Behavior*. 2006 Dec 1;9(4):601-5.
2. Higinbotham NL, Marcove RC. The management of pathological fractures. *Journal of Trauma and Acute Care Surgery*. 1965 Nov 1;5(6):792-8.
3. Habermann ET, Lopez RA. Metastatic disease of bone and treatment of pathological fractures. *The Orthopedic clinics of North America*. 1989 Jul;20(3):469-86.
4. Demartini F, Grokoest AW, Ragan C. Pathological fractures in patients with rheumatoid arthritis treated with cortisone. *Journal of the American Medical Association*. 1952 Jun 21;149(8):750-2.
5. De Mattos CB, Binitie O, Dormans JP. Pathological fractures in children. *Bone & joint research*. 2012 Oct;1(10):272-80.
6. Sarahrudi K, Hora K, Heinz T, Millington S, Vécsei V. Treatment results of pathological fractures of the long bones: a retrospective analysis of 88 patients. *International orthopaedics*. 2006 Dec 1;30(6):519-24.
7. Jackson WF, Theologis TN, Gibbons CL, Mathews S, Kambouroglou G. Early management of pathological fractures in children. *Injury*. 2007 Feb 1;38(2):194-200.