HIGH-VELOCITY FRACTURE: CASE OF DISPLACED INTERTROCHANTERIC FRACTURE OF FEMUR WITH SPIRAL FRACTURE OF SHAFT OF RIGHT FEMUR

Gayathri Sureshkumar Nair

JSS ACADEMY OF HIGHER EDUCATION AND RESEARCH, djcm@jssuni.edu.in

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Abstract

BACKGROUND

Intertrochanteric fracture is a common orthopedic condition characterized by extracapsular fractures of the proximal femur that occur between the greater and lesser trochanter with predominance in elderly population, especially those with osteoporosis, wherein even a low energy mechanism is enough to cause the fracture.

There is an observed female predominance with ratio between 2:1 and 8:1. [1,2]

Commonly observed symptoms include shortened and externally rotated limb, pain and bony tenderness around the hip joint, inability to bear weight on the affected limb to name a few.

Management depends upon age of patient, nature of the fracture, number of comminuted fragments and blood loss.

Treatment for intertrochanteric fractures includes conservative management using Thomas splint application and immobilization after reduction of fracture. In case the fracture is displaced then there is a need for surgical reduction and internal fixation using dynamic hip screw, proximal femoral nail or gamma nails.

CASE DESCRIPTION

A 27-year-old male patient presented to the emergency department of JSS hospital with alleged history of road traffic accident with inability to bear weight on the right lower limb, bony tenderness and crepitus over right hip joint and over right thigh which was confirmed to be intertrochanteric fracture and spiral fracture of shaft of femur on radiographic imaging.

CONCLUSION

This case report presents the mechanism of injury which is high energy mechanism leading to intertrochanteric fracture in young individual and its management.

Keywords

INTERTROCHANTERIC FRACTURE, HIGH-VELOCITY FRACTURE, FEMUR

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CLINICAL HISTORY:

A 27-YEAR-OLD MALE PATIENT WAS ADMITTED AT JSS HOSPITAL WITH A/H/O OF RTA ON 11/6/22 AT 10PM AT K.R NAGAR. NO H/O LOSS OF CONSCIOUSNESS/AMNESIA/VOMITTING/SEIZURES.

NO H/O RHINORRHOEA, OTORRHOEA OR ENT BLEED. HE WAS TAKEN TO A LOCAL HOSPITAL THEN SHIFTED TO KR HOSPITAL FROM WHERE HE WAS REFERRED TO JSS HOSPITAL.

PAST MEDICAL HISTORY: NIL SIGNIFICANT

FAMILY HISTORY: NIL SIGNIFICANT

PERSONAL HISTORY: NIL SIGNIFICANT

EXAMINATION AND INVESTIGATIONS:

GENERAL PHYSICAL EXAMINATION:

27 YEARS OLD MALE PATIENT, MODERATELY BUILT AND NOURISHED, IS ALERT CONSCIOUS COOPERATIVE AND WELL ORIENTED TO TIME PLACE AND PERSON

NO PALLOR, ICTERUS, OEDEMA, CLUBBING, CYANOSIS OR LYMPHADENOPATHY

VITALS

PULSE: 102 BPM
BP: 140/90MMHG
RESPIRATORY RATE: 16CPM
SPO2: 97% AT RA

SYSTEMIC EXAMINATION:

CNS: CONSCIOUS, ORIENTED WITH NO FOCAL NEUROLOGICAL DEFICITS
CVS: S1&S2 HEARD, NO MURMURS
PA: SOFT, NON TENDER, BOWEL SOUNDS HEARD
RS: B/L NORMAL VESICULAR BREATH SOUNDS HEARD, NO ADDED SOUNDS

LOCAL EXAMINATION:

EXAMINATION OF RIGHT LEG

GROSS BONY DEFORMITY OF RIGHT THIGH WITH PAIN AND INABILITY TO BEAR WEIGHT ON RIGHT LOWER LIMB
NO EXTERNAL WOUND OR SKIN DISCOLOURATION
RANGE OF MOVEMENT OF RIGHT HIP AND KNEE PAINFULLY RESTRICTED
BONY TENDERNESS CREPITUS AND ABNORMAL MOBILITY OVER PROXIMAL FEMUR SHAFT OF FEMUR
ACTIVE ANKLE AND TOE MOVEMENTS PRESENT
NO DISTAL NEUROVASCULAR DEFICITS
SpO2 OF RIGHT LL- 97%

X-RAY FINDINGS

SPIRAL FRACTURE OF SHAFT OF RIGHT FEMUR AT JUNCTION OF PROXIMAL AND MID 1/3RD OF SHAFT OF FEMUR
FINAL DIAGNOSIS: INTERTROCHANTERIC FRACTURE OF RIGHT FEMUR AND SPIRAL FRACTURE OF SHAFT OF RIGHT FEMUR AFTER A HIGH VELOCITY INJURY NAMELY ROAD TRAFFIC ACCIDENT.

DISCUSSION:

INTERTROCHANTERIC FRACTURES OCCUR IN THE ELDERLY AND THE YOUNG, WITH PREDOMINANCE IN THE ELDERLY POPULATION, ESPECIALLY THOSE WITH OSTEOPOROSIS WHEREIN EVEN A LOW ENERGY MECHANISM IS SUFFICIENT TO CAUSE THE FRACTURE. THERE IS OBSERVED A FEMALE PREDOMINANCE WITH RATIO BETWEEN 2:1 AND 8:1. NECK OF FEMUR AND INTERTROCHANTERIC FRACTURES IN THE YOUNG ARE MORE LIKELY TO BE A RESULT OF HIGH VELOCITY TRAUMA. [1,2]

XRAYS AP PELVIS, CROSS TABLE LATERAL VIEW AND AP VIEW OF AFFECTED HIP WITH FULL LENGTH XRAY OF AFFECTED FEMUR ARE USEFUL IN PREOPERATIVE PLANNING FOR RESTORING THE CORRECT NECK SHAFT ANGLE.[3]

HERE IN THIS CASE, SURGICAL INTERVENTION IS NECESSARY PREFERABLY USING A DYNAMIC HIP SCREW IN CONJUNCTION WITH AN INTRAMEDULLARY INTERLOCKING FEMORAL NAIL OR A GAMMA NAIL, IN ORDER TO REDUCE AND CORRECT BOTH THE INTERTROCHANTERIC AND THE SPIRAL FRACTURE OF SHAFT OF FEMUR.

CONCLUSION:

INTERTROCHANTERIC FRACTURES MAINLY RESULT FROM HIGH VELOCITY MECHANISMS EXCEPT IN THE ELDERLY AND THOSE WITH OSTEOPOROSIS. MANAGEMENT OF WHICH DEPENDS UPON AGE OF PATIENT, NATURE OF THE FRACTURE, NUMBER OF COMMINUTED FRAGMENTS AND BLOOD LOSS.

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REFERENCES:

