



Ewing Sarcoma: A Case Report

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ABSTRACT :

Ewing Sarcoma is a rare and aggressive malignant tumor, predominantly affecting children and young adults. It commonly arises from bones or soft tissues and presents diagnostic and therapeutic challenges due to its rapid progression and metastatic potential. A 32 yrs. old admitted at Regional cancer Hospital, Shimla during the month of Feb' 2025 with the chief complaints of pain in left leg and swelling in left leg since 2 months. After the general physical examination, routine blood profile and other Lab investigation, radiological investigations, PET-scan in which she was diagnosed with Ewing sarcoma under evaluation. Patient underwent for surgical intervention (Amputation). Prognosis was good and followed by chemotherapy and radiotherapy.

Key words: Ewing Sarcoma, Amputation

INTRODUCTION :

Ewing sarcoma is a rare and aggressive malignant bone and soft tissue tumor that primarily affects children, adolescents, and young adults. Initially described by Dr. James Ewing in 1921, this cancer predominantly arises from the bones but can also occur in soft tissues surrounding the bones. Accounting for approximately 1% of all childhood cancers, Ewing sarcoma most commonly affects the long bones, pelvis, ribs, and vertebrae. The exact cause of Ewing sarcoma remains unclear, but it is strongly associated with specific genetic abnormalities, particularly the EWSR1-FLI1 fusion gene resulting from chromosomal translocation.

The clinical presentation of Ewing sarcoma often includes localized pain, swelling, and occasionally systemic symptoms like fever and weight loss. Due to its rapid growth and potential for metastasis, especially to the lungs, bones, and bone marrow, early diagnosis and intervention are critical for improving patient outcomes. Standard treatment protocols typically involve a combination of multimodal therapies, including chemotherapy, radiation therapy, and surgical resection.



CASE PRESENTATION :

A 32 years old female presents with the chief complaints of pain in left leg and swelling in left leg since 2 months at Regional Cancer Hospital, Shimla during the month of Feb, 2025. After the general physical examination, routine blood profile and other Lab investigation, radiological investigations,

PET-scan in which she was diagnosed with Ewing sarcoma under evaluation. Additionally, she underwent medical (Chemotherapy) and surgical (Amputation) management.

Present Medical History:

Patient was asymptomatic 2 months back after which she developed pain left side of the leg which was very intense and swelling in left thigh.

Chief complaints:

Pain in left leg and distal thigh x 2 months

Swelling in left leg and distal thigh x 2 months

Present Surgical History:

Patient underwent Amputation of left leg.

HISTORY OF PAST ILLNESS:

Past medical history:

Patient had no significant past history of communicable and non-communicable diseases. No history of seizure, Cyanotic spells etc. Not allergic to any drug or food.

Past surgical history:

Patient had no any specific and significant past surgical history in the past years.

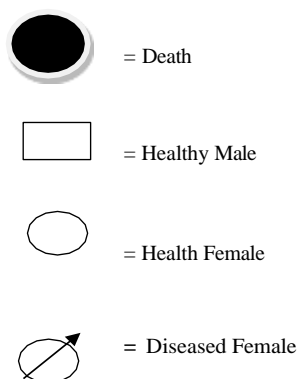
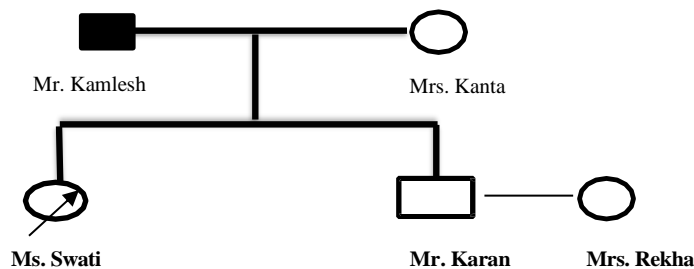
FAMILY HISTORY & FAMILY TREE MEDICAL HISTORY-

All the family members of patient are healthy and medically fit. No any history of genetic disorder and hereditary problems like Diabetes mellitus, hypertension etc.

SURGICAL HISTORY-

Patient's family members had no any specific and significant past or present surgical history as of appendectomy, hysterectomy, cholecystectomy or no history of genetic disorders etc. All the family members are healthy

FAMILY TREE



PERSONAL HISTORY

- **Economic Status:** Patient belongs to a middle-class family. Annual income is approximately Rs.1, 15,000.
- **Dietary Pattern:** Patient was on normal diet.
- **Addiction:** Patient was not addicted to any alcohol and smoking/tobacco chewing.
- **Elimination Pattern:** Patient's elimination pattern was normal.

General examination

- Weight: 69 Kg
- Respiratory Rate: 22 breaths/ minute

- SpO₂: 98%
- Afebrile
- Pain Score was 7

Special Investigation:

Routine blood profile, Liver Function Test, Blood Urea Nitrogen, ECG, ECHO, Prothrombin time studies, CT Scan of Leg (plain and contrast), X-ray of leg, PET-Scan.

Surgical Intervention: Amputation of left leg.

Eventually, Patient was admitted to hospital for the chemotherapy.

Care plans:

Nursing Problems such as acute pain, risk for infection, impaired mobility and disturbed body image were identified and addressed by appropriate nursing interventions.

DISCUSSION:

Ewing Sarcoma is a rare and aggressive type of cancer that primarily affects the bones or the soft tissue surrounding bones. It most commonly occurs in children, adolescents, and young adults, with a peak incidence between ages 10 and 20. The tumor usually develops in long bones like the femur, pelvis, ribs, or spine but can also affect other areas. Symptoms often include pain, swelling, and occasionally fever or fatigue. The exact cause of Ewing Sarcoma is unknown, but it is associated with specific genetic changes. Treatment typically involves a combination of chemotherapy, surgery, and/or radiation therapy to improve survival rates. Early diagnosis and comprehensive treatment are crucial for better outcomes.

Key features:

- **Age of Onset:** Most commonly affects children, adolescents, and young adults between ages 10 and 20.
- **Location:** Primarily involves bones (especially long bones like the femur, pelvis, ribs, and spine) but can also occur in soft tissues.

Symptoms:

1. Bone Pain.
2. Swelling & Tenderness:
3. Reduced Mobility:
4. Fractures

Systemic Symptoms

- Fever of unknown origin.
- Fatigue and general weakness.
- Unintended weight loss.

Neurological Symptoms (if spinal involvement)

Causes and Risk Factors:

The exact cause of Ewing Sarcoma is unknown. However, it is linked to specific genetic mutations, particularly a chromosomal translocation where genetic material is exchanged between chromosomes 11 and 22.

1. Age
2. Gender
3. Ethnicity
4. Genetic Factors
5. Family History

Diagnosis:

1. Clinical Evaluation:

- Thorough medical history and physical examination.
- Assessment of symptoms such as pain, swelling, and decreased mobility.

2. Imaging Studies:

- X-rays
- Magnetic Resonance Imaging (MRI)
- Computed Tomography (CT) Scan
- Bone Scan
- Positron Emission Tomography (PET) Scan

3. Biopsy:

- Core Needle Biopsy or Surgical Biopsy
- Histopathological Analysis

4. Genetic Testing:

- Fluorescence In Situ Hybridization (FISH)
- Reverse Transcriptase Polymerase Chain Reaction (RT-PCR)

Treatment:

- Chemotherapy: Vincristine, Doxorubicin, Cyclophosphamide (VDC), Ifosfamide, and Etoposide (IE).
- Surgery: Limb-sparing surgery (most common), Amputation (if necessary, but rare), Reconstructive surgery (using prosthetics or bone grafts).

CONCLUSION :

A 32 yrs. old admitted at Regional cancer Hospital, Shimla during the month of Feb' 2025 with the chief complaints of pain in left leg and swelling in left leg since 2 months. After the general physical examination, routine blood profile and other Lab investigation, radiological investigations, PET-scan in which she was diagnosed with Ewing sarcoma under evaluation. Patient underwent for surgical intervention (Amputation). Prognosis was good and followed by chemotherapy and radiotherapy.

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