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A Case Report on Uterine Leiomyosarcoma with Aneamia

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Abstract:- LMS (Leiomyosarcoma) is a rare cancer that grows in smooth muscles of the body, these smooth muscle are located in various parts of body and in females these are also present in uterus. Uterine LMS comprises about 3 – 7% of all uterine malignancies which may be characterized by abnormal bleeding from uterus, abnormal vaginal discharge and abnormal uterine growth. This is likely to occur in women with perimenopausal age. We came across this case of Uterine LMS in 32 yr old female patient presented with polymenorrhea since 6 months associated with dysmenorrhea, curdy white discharge. Patient underwent USG of Abdomen with pelvis, the impression of scan was Bulky uterus with firm masses on either side of adnexa. Patient underwent endometrial biopsy and report revealed that it's a non-metastasized leiomyosarcoma stage-1. Based on subjective findings and biopsy report the patient was diagnosed with leiomyosarcoma with Anaemia. Patient underwent a surgical procedure known as tumor resection and Total Abdominal Hysterectomy (TAH) and treated with Antibiotics and painkillers and the patient was recovered after 3 weeks. And advise to take 2 cycles of chemotherapy.

I. INTRODUCTION

LMS (or) Leiomyosarcoma is a rare cancer that grows in smooth muscles of the body. These smooth muscles are located in intestine, stomach, bladder, blood vessels and in females these are also present in uterus. It is an aggressive cancer which grows quickly, most often found in abdomen or in uterus[1].

II. EPIDEMIOLOGY

- LMS is the most common type of soft tissue sarcoma (STS). It accounts about 10 – 20 % of all STS's. It is more common in adults than in childrens. LMS of uterus effects about 6 per 1 million people per year in US and only 20 – 30 childrens are diagnosed with LMS in US per year[1].
- Uterine LMS occurs in womens of perimenopausal age group. It comprises about 3 – 7 % of all uterine malignances[2].

➢ *CAUSES:*

The exact cause of uterine leiomyosarcoma is unknown. They frequently happen on their own, seemingly out of no where. Rarely, some experts think they might indicate a malignant transition form a benign (non cancerous) fibroid. Contributing roles for causing this sarcomas may include:

- Genetic and immunologic abnormalities
- Environmental factors (exposure to UV rays, certain chemicals, ionizing ration, diet, stress etc).
- Some inherited conditions in families may also increase the risk of developing leiomyosarcoma like Gardner syndrome, Li – fraumens syndrome, Warner syndrome, Neurofibromatosis and immune deficiency syndrome.

➢ *PATHOPHYSIOLOGY:*

Malignant smooth muscle neoplasms, which can arise anywhere in the body but are most frequently detected in the uterus, small intestine, and retroperitoneum, are the hallmark of the pathophysiology of leimyosarcoma[5].

LMS is a type of STS which as more complex and unbalanced karyotypes that results in severe genomic instability and the cytogenic changes in LMS are not consistent hence makes it heterogenous disease. The common changes in LMS occur in the form of loss of chromosomes 10q (PTEN) &13q (RB1) and gain at 17p (TP53)[2].

Loss of 13q results in mutation in RB1 gene (Retinoblastoma gene), as it is a tumour suppressor gene identified in 90% patients with LMS[2].

➢ *HISTOPATHOLOGY[2]:*

Uterine LMS is subcategorized into epitheloid, myxoid, spindle cell and other rare types. Most uterine LMS are solitary lesions with irregular and infiltrative borders and are usually present intramurally and 5% can originate from cervix. LMS exhibits alternating regions of necrosis and bleeding instead of the whorled looks of benign leiomyoma. Upto 80% of uterine LMS cases include tumor cell necrosis, also known as bad necrosis, which is defined by a rapid change from viable to necrotic cells. A characteristic of benign leiomyoma and a small number of uterine LMS is infarct necrosis, also known as nice necrosis.

➢ *IMMUNOHISTOCHEMISTRY[2]:*

The gonadotropin-releasing hormone receptor, aromatase, Wilms tumor gene 1, and platelet-derived growth factor receptor-alfa are expressed by the majority of uterine LMS. Although LMS frequently display CD117 (a KIT mutation), this does not result in an oncogenic mutation. Thus, medications that target the KIT mutation (Imatinib) are ineffective for treating uterine LMS. Epidermal growth factor receptor 2 (ERBB2) and epidermal growth factor receptor (EGFR) are not expressed in uterine LMS.

➢ ***CLINICAL FEATURES[3]:***

- Leiomyosarcoma symptoms may vary depending on the size location and spread of the tumour.
- In early stages it may be asymptomatic. pain may occur in the effected area but it is uncommon. General symptoms may associated with cancer may include fatigue, fever, weight loss, malaise, nausea and vomiting.
- Leiomyosarcoma of uterus causes abnormal bleeding from uterus into vagina with abnormal vaginal discharge, abnormal uterine growth and change in bladder and bowel habits.
- Potentially can cause life threatening complications.

➢ ***EVALUATION:***

- There is no particular radiographic or laboratory test may be used to diagnose leiomyosarcoma. Imaging tests may include CT scan (better for retroperitoneal & visceral lesions), MRI (better for evaluating tumors in extremities, head and neck).
- In Uterine LMS condition, Endometrial biopsy gives diagnosis. Biopsy of the lesion that is suspected makes the perfect diagnosis. An open incisional biopsy or core needle biopsy should be performed to identify and obtain histologic subtype and grade of sarcoma[2].
- Fine needle aspiration is inadequate to diagnose this conditions.

➢ ***MANAGEMENT:***

Management depends on the stage of the disease and treatment goals include control of the symptoms, decrease tumour bulk & improve the survival rate.

- Local tumours can be managed by surgical resection.
- Metastatic disease is incurable.
- Radiotherapy may improve local control & improve function but it will not improve survival rates in STS.
- Chemotherapy is given as adjuvant and nonadjuvent therapies after the surgery.

In Uterine leiomyosarcoma a standard surgical procedure is followed for both early and advanced stage disease, that is hysterectomy and en bloc resection of any viable tumour. Oopherectomy, lymph node assessment is undesirable unless the tumour involves metastasis[2].

III. CASE REPORT

➢ *History of present illness:*

A 32 year female patient presented in gyneacology department with chief complaints polymennorhea since 6 months changing pads 6 – 7 per day associated with dysmenorhea passing clots and curdy white discharge.

- **Past history:** patient was previously diagnosed with Bronchial Asthma in 2018 and on inhaler.
- **Surgical history:** Total Thyroidectomy 4 yrs back (Toxic goiter) and Radioactive iodine treatment was given for 2 years.
- **Obstetrical history:** P3L2D1 all NVD, menstrual cycle LMP – 7/3/23, MH – Regular.
- **Family History:** No significant family history
- **Social History:** No significant social history
- **Occupation:** House wife
- **Diet:** Mixed
- **Sleep:** Adequate
- **Bowel Habits:** Regular
- **Allergies:** No known medicine, food and environmental allergies.

➢ *Physical Examination:*

- VITALS: Temperature- 97F, B.P- 110/60mmHg, HR- 79bpm, RR- 23/min, SPO2- 98%
- **General Examination:** patient was looking pallor.
- **Respiratory function:** she has normal respiratory function with no wheezing, no crept sounds.
- **Cardiovascular function:** she has regular heart rate with no murmurs.

IV. LABORATORY STUDIES

➢ *INITIAL EVALUATION:*

Initially the work was done on the investigations in gynaecology department and revealed that her Serum electrolytes, Thyroid profile, Coagulation profile was normal and her serum creatinine levels are 0.9mg/dl and her CBP shows Hb – 6.9g/dl, RBC – 3.2mill/cum, WBC – 5500 cells/cum, Platelets – 2,75,000 cells.

After transfusion of blood, Hb – 9g/dl, RBC – 3.9mill/cum.

- Para Abdomen: On examination para abdomen was soft, firm masses palpable in right side of hypochondric region.
- Perspeculum examination: cervix and vagina appears Normal
- Pervaginal examination: Uterus appears bulky and lobule with firm masses felt either side of adnexa, mobility of uterus restricted.

➢ *CONFIRMATORY EVALUATION:*

- USG of Abdomen: Bulky uterus with firm masses on either side of adnexa.
- Biopsy Report: Leiomyosarcoma with non – Metastasized tumour stage - 1

- ***DIAGNOSIS:*** *Based on the laboratory findings diagnosis the patient was diagnosed with uterine leiomyosarcoma with Anaemia.*

- ***MANAGEMENT:***

Patient underwent endometrial biopsy and the report revealed that leiomyosarcoma with non – metastasized tumour stage-1. And the patient treated surgically through Tumour resection and Total Abdominal Hysterectomy. Patient was recevored after 3 weeks. Patient was treated with antibiotics and painkillers. And was advised to take 2 cycles of chemotherapy.

V. DISCUSSION

Leiomyosarcoma is a rare cancer that grows in smooth muscles of the body, which grows quickly and most often found in abdomen and in uterus. Uterine LMS mostly occurs in women of perimenopausal age and comprises about 3 – 7% of all uterine malignancies. The exact cause of uterine LMS is unknown and may be due to various factors like genetic abnormalities, Environmental factors and some syndromes etc. which may be characterized by abnormal bleeding from uterus, abnormal uterine growth, vaginal discharge and change in bladder & bowel habits. This Uterine LMS can be evaluated by USG scan, CT scan and other laboratory findings and biopsy. Can be managed by surgical resection, hysterectomy can be done and chemo & radiation therapy can also be used in case of malignancy.

Based on the patient symptoms and biopsy report the patient was diagnosed with uterine LMS with Anaemia and Treated by a surgical procedure of Tumour resection and Total Abdominal Hysterectomy (TAH) and given Antibiotics and Painkillers and patient condition was improved. And advised to take 2 cycles of chemotherapy.

VI. CONCLUSION

In my case report the major cause for development of leiomyosarcoma in early age was may be the usage of Radioactive iodine for toxic goiter. Patient treated surgically and recovered within 3 weeks. Doctor advised 2 cycles of chemotherapy.

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CONFLICTS OF INTEREST: None

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