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Case Report

RETROPERITONEAL LIPOSARCOMA-EXCISION OF RETROPERITONEAL TUMOR AND RIGHT NEPHRECTOMY: A CASE STUDY

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ABSTRACT

A 64-year-old woman was referred to the hospital with complaints of abdomen right side tightness with discomfort for 1 month. Computed tomography scan of abdomen investigation revealed large retroperitoneal mass measuring 18.9 cm × 12.1 cm displacing the inferior vena cava right kidney and renal vessels in right hypochondriac and lumbar regions of the abdomen with large fat components. She underwent surgery, which involves the resection of tumor mass with non-affected surgical margins. These tumors tend to be resistant to radiotherapy or chemotherapy. Among the most important prognostic factor related to survival is surgery with non-affected margins. A review on etiology, pathophysiology, pathological classification, and grading is explained in literature review.

Keywords: Liposarcoma, Retroperitoneal, Sarcoma, Well-differentiated, Radiotherapy, Chemotherapy.

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INTRODUCTION

Retroperitoneal liposarcoma refers to liposarcoma arising from abdomen and pelvic retroperitoneal adipose tissue [1]. According to Windham and Pisters (2005), liposarcoma accounts for <1% of systemic malignant tumors; retroperitoneal liposarcoma is the most common type (41%) of retroperitoneal soft tissue sarcoma followed by leiomyosarcoma and malignant fibrous histiocytoma. Onset of age is 55–75 years, slightly more common in men than in women with a ratio of 1.3:1 for men to women consisting of 68.3% retroperitoneal tumor and 11.6% liposarcoma [2]. Among 119 cases of retroperitoneal liposarcoma, the ratio of male to female incidence was 1.9:1 and the median age at onset was 58 years old [3]. Immune deficiency and immunosuppressive drugs are associated with the pathogenesis of retroperitoneal soft tissue sarcoma [4]. It is reported that patients with systemic lupus erythematosus developed diffuse infiltrative retroperitoneal mucinous liposarcoma [5] after treated with steroid hormone for 13 years. Individuals with a family history of lipoma or liposarcoma are more susceptible to developing retroperitoneal liposarcoma [6]. Retroperitoneal liposarcoma has been reported to occur successively in two compatriots with a family history of malignant fibrous histiocytoma. The pathogenesis of retroperitoneal liposarcoma remains unclear [9] and may be related to molecular mechanism [10].

Mechanism of MDM2-p53

MDM2 gene (human homolog of the murine double minute type 2) located at 12q13-15 region shows constant amplification in well-differentiated liposarcoma [11]. MDM2 is a p53-specific E3 ubiquitin ligase and principle cellular antagonist of P53, acting to limit the p53 growth-suppressive function in unstressed cells [12]. In healthy body, the precise balance between p53 and MDM2 guarantees the normal proliferation and differentiation of tissue cells. If MDM2 is overamplified, p53 activity is inhibited, resulting in uncontrollable cell proliferation. This may be related to the pathogenesis of retroperitoneal liposarcoma [13].

Mechanism for prune-nm23-H1

Prune the human homolog of Drosophila prune gene, located in 1q21-23, encodes a protein that can bind to nm23-H1 [14] (nucleoside-diphosphate kinase) to downregulate its activity. The nm23-H1 may inhibit cell proliferation and tumor metastasis. The balance and precise coordination between prune and nm23-H1 expression present in healthy human bodies, in contrast, overexpression of prune gene is found in liposarcoma, with downregulation of nm23-H1 activity [15]. This may be one of the molecular mechanisms responsible for the pathogenesis of liposarcoma [16].

CASE REPORT

The study was conducted as per approval given by IRB with reference no. IRB/NCPA/12/2019. A 64 years female patient admitted in hospital with chief complaints of abdomen right side tightness with discomfort for 1 month and decreased appetite and weight loss. She had a history of diabetes mellitus and hypertension on regular medication.

Computed tomography (CT) scan of chest

Impression

- Known case of retroperitoneal tumor
- Small patchy fibrotic lesions are seen in the right lower lobe
- No soft tissue density nodules seen in both lungs.

CT coronary angiogram

Impression

Total calcium score of 294 multiple calcified and mixed plaques in proximal mild left anterior descending. Moderate stenosis is seen in proximal left anterior descending (52% diameter stenosis) calcified plaques in proximal left circumflex artery and in obtuse marginal causing mild stenosis (29% diameter stenosis) discrete calcified plaques in proximal and mild right coronary artery no significant stenosis.

CT scan of abdomen (plain and contrast)

Impression

Large retroperitoneal mass measuring 18.9 cm × 12.1 cm right kidney and right vessels in right hypochondria and lumbar regions of the abdomen with large fat components multiple small calcified fibroids in the uterus.

DISCUSSION

The first description of a retroperitoneal lipomatous tumor excision was made in 1761 by Giovanni Battista Morgagni during the autopsy of a 60-year-old woman. These tumors are uncommon malignant

representing between 0.07% and 0.2% of all neoplasm. They have an incidence of approximately 2.5 inhabitants per 100,000 with an average age of presentation between 40 and 60 years, with distribution in both sexes equally. Most of them are diagnosed incidentally when performing an imaging test for another reason since most are asymptomatic. They can produce during their growth usually when they exceed 20 cm non-specific abdominal pain, early satiety, neurological, or obstructive symptoms (urinary or digestive) by compression. For its diagnosis, the test of choice is CT with intravenous contrast since it allows in most cases an adequate staging and pre-operative evaluation. The retroperitoneal tumors appear as a large homogenous encapsulated mass of fatty tissue with fine septa displacing the renal parenchyma or even the intestinal bundle. Abdominal ultrasound may confirm the presence of a hyperechoic mass and may be useful at the beginning of the study. The World Health Organization has classified the liposarcomas into two groups according to the degree of differentiation in low grade and high degree. In our case patient came with complaints of abdomen right side tightness with discomfort, loss of appetite, and weight loss; these are the symptoms or etiological factors for this patient who result from toxins produced by necrotic tissue, metabolites, and cachexia. She had a history of hypertension and diabetes on regular medication for 10 years, adequate urine output and bowel and bladder habits are regular. The mainstay therapy for retroperitoneal liposarcoma is complete surgical excision. The patient underwent a surgical procedure of complete excision of existing tumor and right nephrectomy. Retroperitoneal tumors grow in an occult manner most patients are asymptomatic in the early stage. Often manifested as painless mass and has grown into a very large size before being detected. Symptoms and signs may not be obvious until the tumor has grown large and compressed adjacent organs or tissues. Retroperitoneal tumors that grow in loose connective tissue space of the retroperitoneum usually do not cause obvious symptoms when they are small. When they grow to a large size, the tumor may result in symptoms by compressing and invading blood vessels, nerves, and other vital organs.

Table 1: Medication history

Inj. mixtard	Subcutaneous
T. Diamicron-XR	60 mg
T. Metformin	500 mg
T. Telsartan-H	40 mg/12.5 mg
T. Atocor	5 mg OD
T. Shelcal	OD

Table 2: Physical examination

Temperature	98.6°F
Blood pressure	140/90
Pulse rate	80
Respiration rate	20
SpO_2	98%

Table 3: Hematology

Test	Result	Units	Values
Hb	11.5	g/dl	12–15
MCHC	31.9	g/dl	32.0–37.0

Table 4: Biochemistry

Test	Result	Units	Values
Bilirubin-total	1.26	mg/dl	0.00–1.20
Bilirubin-direct	0.41	mg/dl	0.00–0.30
Bilirubin-indirect	0.85	mg/dl	0.10–0.80

Table 5: Drug chart

Drugs	Dose
Inj. Magnex forte	1.5 g TID
Inj. Metrogyl	500 mg TID
T. Tramadol	50 mg TID in 100ml NS
Inj. Pantop	40 mg BD
Buvalor patch	10 mg to be applied
Neb. Duolin	Respules BD
Inj. Zofer	4 mg TID

Surgical procedure

35 cm × 30 cm sized tumor was identified in the right side of retroperitoneal adherent to right kidney.

Pre-operative

T. Pantop HS
Inj. Trika 0.25 mg
Sodium Phosphate Enema
Inj. Taxim 1 g
Inj. Amikacin 500 mg.

Post-operative

IV fluids dextrose normal saline/ringers lactate 120 m/h
Vitals checked
Inj. Magnex Forte 1.5 g in 100 ml
Inj. Metrogyl 500 mg
Inj. Tramadol 50 mg in 150 ml
Inj. Pantop 40 mg
Epidural analgesia whenever needed
Buvalor patch
Duolin nebulizer
Inj. Zofer 4 mg
Watch 0 drain for bleeding.

Pharmacist intervention

Untreated condition

*Multiple small calcified fibroids in uterus.

CONCLUSION

In this case, the study patient came with complaints of abdomen right side tightness with discomfort for 1-month necessary investigations were done and diagnosed as retroperitoneal liposarcoma underwent surgical procedure of excision of tumor and right nephrectomy was done. During the hospital stay, the patient is treated accordingly with symptomatic and supportive measures. We apprehend that surgery is the mainstay of treatment of non-metastatic retroperitoneal liposarcoma. The fat content accounts for >75% of well-differentiated liposarcoma tissue, while the non-fat content is generally manifested as nodule or mass. In conclusion, liposarcomas are rare tumor that due to its retroperitoneal location does not present specific symptoms, being diagnosed when they present a large size and produce compressive symptoms. The use of the chemotherapy or radiotherapy is contraindicated due to the low sensitive of these types of tumors.

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AUTHORS' CONTRIBUTIONS

N. Venkata Yaseswi – Case reporting. T. Vinay Kumar – Journal Drafting and Editing. K. Vyduryam – Collection of data.

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CONFLICTS OF INTEREST

None.

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