

Dedifferentiated Liposarcoma Masquerading as Tuberculosis in a 25-year-old Female Patient

Yvonne Bettina E. Montejo, M.D.* and Herlyn C. Abasolo, M.D.**

Abstract

Introduction: A case of a 25-year-old female, who initially presented with right massive pleural effusion, treated as tuberculosis and who eventually with recurrence of pleural effusion and ascites, biopsy of the peritoneum was done revealing an undifferentiated malignant neoplasm of unknown origin, most likely liposarcoma.

Clinical Presentation: Patient initially presented with chronic cough and gradual onset of dyspnea. A chest radiographic finding of massive right pleural effusion led to her first admission. Succeeding admissions were due to abdominal distention, evident right breast mass and recurrence of pleural effusion. Patient was asthenic with decreased breath sounds on right lung field; firm and fixed mass on right breast; distended abdomen with ascites. Pleural and peritoneal AFB smear, culture and sensitivity; XPERT MTB/RIF; Cytology, cell block and pleural biopsy; CT scan of the chest and whole abdomen; biopsy of right breast mass; biopsy of thickened peritoneum were done. The patient was diagnosed with multiple organ failure secondary to disseminated tuberculosis with secondary bacterial intraabdominal infection s/p CTT, paracentesis, incision

biopsy of right breast mass and exploratory laparotomy, enterolysis and omental biopsy (pending result).

Outcome: From the initial presentation of pleural effusion, patient eventually succumbed to death after five months due to multi-organ failure.

Significance of the study: This is a clinically relevant disease since liposarcoma usually occurs in male adults with a median age of 50 years old and with the dedifferentiated type becoming extremely aggressive in the post-metastasis course as patient usually dies of systemic tumor dissemination at a median of five months after developing the first metastasis

Recommendations: Management of these tumors requires a multidisciplinary team approach. Early identification of such sarcoma will lead to timely and cost-effective management. Further studies and identification of other similar cases should be done to determine or support the use of radiation and chemotherapy.

Keywords: liposarcoma, tuberculosis, malignant neoplasm of unknown origin

Introduction

Less than one percent of all malignancies are Sarcomas.¹ It is a rare mesenchymal neoplasm that may be divided into two groups; those derived from bone and those from soft tissues. In relation to other types of cancer, soft tissue sarcomas are relatively rare and liposarcomas is the most common of its subtype which accounts for less than 20%.² Liposarcoma tends to affect adults between the ages of 40 and 60 and is more common in males. It can occur in almost any part of the body, but more than half of liposarcoma cases involve the thigh, and up to a third involve the abdominal cavity. Most cases arise de

novo from deep seated, well vascularized structure and rarely develop from a pre-existing benign lipoma.² Among the liposarcoma subtypes, Dedifferentiated liposarcoma occurs most commonly on the retroperitoneum and has higher risk for metastasis, with the lung and the liver as the most common site, while an intraperitoneal location is extremely rare.³

Diagnosis of retroperitoneal and intraperitoneal liposarcoma is often delayed since disease remains asymptomatic until progression can be detected on physical examination or when symptom of obstruction begins to manifest, already as a large, locally advanced lesion. The treatment of retroperitoneal liposarcomas is based on surgical resection. However, complete removal of tumors within the abdomen is difficult because of the difficulty in getting a clear margin while chemotherapy and radiation therapy may confer a survival benefit.⁴ Hence, the rarity of these cases and the non-specific signs and symptoms makes it difficult for clinicians to diagnose and to provide early treatment to these patients.

*Adult Pulmonology, Department of Internal Medicine, Cebu Velez General Hospital

**Medical Resident, Department of Internal Medicine, Cebu Velez General Hospital

Corresponding Author: Herlyn Abasolo, M.D., Cebu Velez General Hospital, Cebu City, Philippines
Email: herlyn.abasolo@gmail.com

Case Presentation

This is a case of a 25-year-old female initially admitted due to right massive pleural effusion. Complaints of unproductive cough were noted two months prior to the first hospitalization with subsequent dyspnea. Upon admission, Chest tube thoracotomy of the right thorax was done, draining 1,065 cc of serous, exudative fluid with lymphocytic predominance. Acid Fast Bacilli smear, culture and sensitivity were negative while cytology and cell block showed hypocellular cells with few lymphocytes. Tissue biopsy showed a chronic non-caseating granulomatous inflammation. Patient was then treated with anti-tuberculosis regimen. Repeat Chest X-ray showed re-expansion of the right lung and computerized tomography scan of right middle lobe showed atelectasis with loculated right pneumohydrothorax with pleural thickening. Patient was eventually discharged improved and continued on anti-TB medications.

One month after discharge, patient reportedly noted a firm mass on the upper outer quadrant of her right breast with such breast larger than the left and with nipple inversion. Two weeks later, mass noted to be increasingly firm (10cm in its widest dimension) thus, a fine needle aspiration biopsy was done revealing mastitis and ruled out malignancy. At the same time, an increasing abdominal girth was noted associated with nausea, vomiting and a three kilogram weight loss. Eventually abdomen became rigid associated with shortness of breath thus prompted patient's second admission. Upon admission, CT-scan of the whole abdomen revealed a hypo-attenuating mass 3.3x4.8x4.6cm in the lower uterine segment/cervix and right adnexal complex structure and a massive amount of loculated ascites with diffuse omental thickening and enhancement (Figure 1).

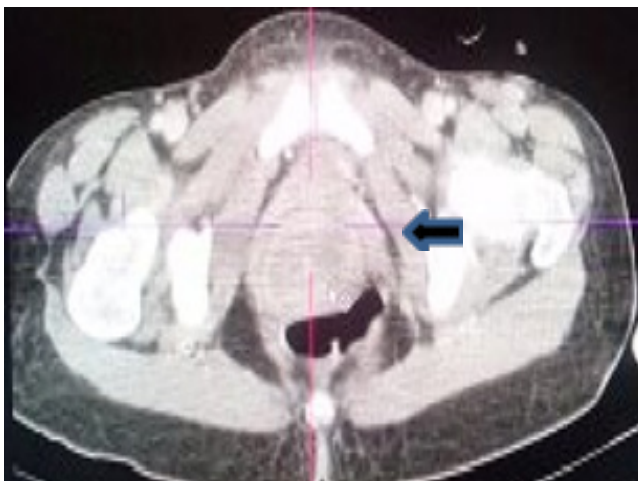


Figure 1. Hypoattenuating mass in lower uterine segment/cervix and right adnexal complex structure with loculated ascites

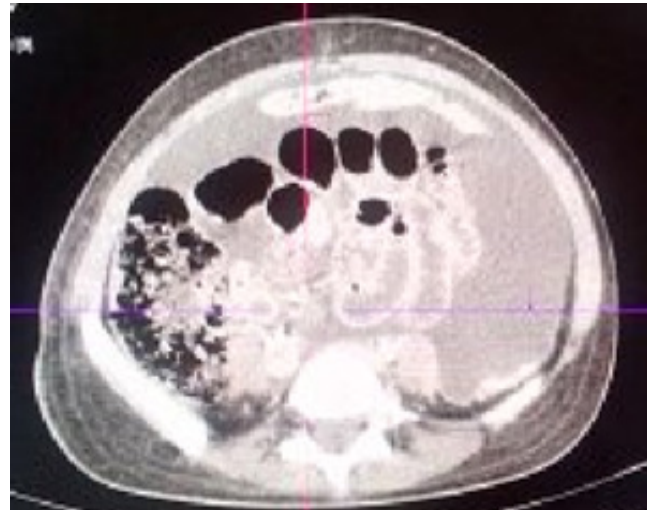


Figure 2. Thickened omentum and enhancement

However, transvaginal ultrasound done was unremarkable. Recurrence of pleural effusion of the right lung was also noted. An ultrasound guided paracentesis with pigtail insertion was done obtaining an initial amount of 1,300 cc turbid fluid with lymphocytic predominance and a Serum Ascites Albumin Gradient (SAAG) of 0.99 with a cytology report of chronic inflammation with no tumor cells seen and also negative for culture and XPERT MTB/RIF. Patient did not consent for breast mass biopsy and was subsequently discharged and treated as extrapulmonary tuberculosis.

Three weeks later, patient was readmitted due to recurrence of right pleural effusion incidentally from a serial chest X-ray as advised and recurrence of abdominal distension. Patient was also noted to be asthenic and was about 30% lighter from her initial weight. Patient did not comply with the anti-TB medications and even consulted with alternative medicine therapy prior to last admission. A fluoroscopic guided CTT and incision biopsy of the right breast mass was done. Cytology of pleural fluid revealed acute inflammation and no tumor cells seen. Right lung biopsy revealed fibrinous and fibrous tissue with chronic inflammation while right breast biopsy showed Fibrosis with sclerosing adenosis. TB medications were continued however, difficulty of administering such drugs was noted due to unresolved abdominal distention even with paracentesis. A planned tube jejunostomy was then appraised and scheduled. However, intra-op findings showed a large mass on anterior abdomen probably omentum with adhesions on peritoneal cavity and planned surgery was not done due to extensive adherence of the intestines and had no suitable access on any part of the intestine for the tube jejunostomy due to shortened bowel mesentery (Figure 2).

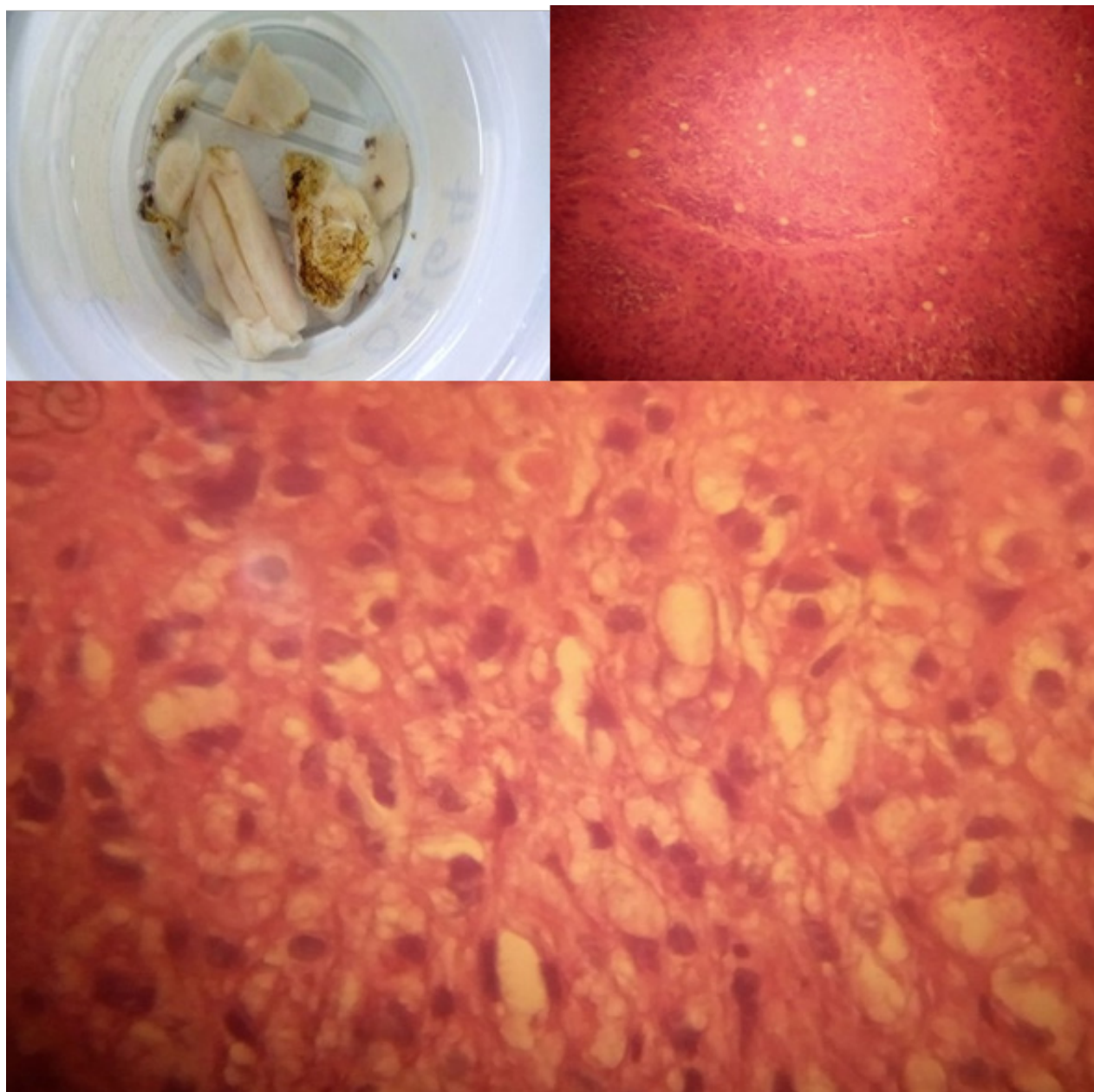


Figure 3. upper-left: pinkish-tan irregular fragments of firm tissue; upper right: microscopic view (LPO) showing malignant neoplastic process showing a proliferation of loosely arranged but diffusely infiltrative tumor cells; bottom: microscopic examination (HPO) showing diffusely infiltrative tumor cells which are relatively small with hyperchromatic nuclei.

A 3.2 liter of ascitic fluid was also evacuated and a section of the thickened peritoneum was sent for biopsy revealing an undifferentiated malignant neoplasm of undetermined origin, most likely liposarcoma. Three days after surgery, patient deteriorated and eventually died of multiple organ failure.

Discussion

Dedifferentiated liposarcoma occurs mostly on the retroperitoneum and carries a poor prognosis compared with those occurring in the extremities. It can also be found in unusual sites such as on the spermatic cord, peritoneal cavity, axilla, and even the breast.⁵ Likewise, in tuberculosis, any organ can be affected with lymph nodes and pleura being one of the most common sites for extrapulmonary

infection. In this case, the patient presented with a massive pleural effusion after having chronic cough of two months duration, which is a typical finding of tuberculosis. An exudative pleural fluid with lymphocytic predominance, negative cytology and cell block, and a tissue biopsy of a non caseating granulomatous inflammation had led to an initial diagnosis of tuberculosis. Thus the patient was managed as such. Since tuberculosis can affect any site of the gastrointestinal tract, the onset of ascites in the patient also led to the further possibility of such infection as peritoneal fluid studies showed an exudative with lymphocytic predominance and a non-portal hypertensive cause of ascites which is typical of peritoneal tuberculosis. In comparison, malignancy related ascites is less common. According to the World Journal of Oncology, 2013, Intraperitoneal dedifferentiated liposarcoma is extremely rare with only eight cases reported to date.³ It's diagnosis is always late since symptoms begins to manifest when already at the late stage. Most of the liposarcoma have no symptoms unless the tumor is large enough to cause obstruction of neighboring organs. Malignancy should be suspected in a mass more than 5.0 cm, deep seated, firm and fixed to underlying structures.⁶ Since dedifferentiated liposarcoma are aggressive, they tend to metastasize, with the lungs and liver being the most common site. Local recurrences of the affected sites are also common and could be an initial presentation of patient with such histologic subtype. Obstructive symptoms in this patient were manifested about three months from the initial presentation of pleural effusion. Recurrence of ascites as well as pleural effusion was also noted despite paracentesis and CTT.

Based from the current diagnosis and management⁴ of patients with retroperitoneal sarcoma, the modality of choice for patients presenting with a palpable abdominal mass is a high resolution thin cut CT-scan with contrast which will show a tumor containing areas of fat attenuation which is less likely to be seen in higher grade lipoma.⁴ Still, a definitive diagnosis can be made with biopsy, with the use of immunohistochemistry and also with cytogenetic, as the chromosomal translocation of the FUS-CHOP gene is the most common factor for adipocyte differentiation.² Difficulty in identifying origin of liposarcoma is usually encountered as some tumor will show morphologic appearance resulting from tumor progression of various sarcomas as reported in a case of intraperitoneal dedifferentiated liposarcoma by Grifasi, C. et.al. The peritoneal biopsy of this patient showed an undifferentiated malignant neoplastic process (Figure 3) of unknown origin which is characterized by a proliferation of loosely arranged but diffusely infiltrative tumor cells with most part of it appearing as naked nuclei, thus probably liposarcoma. Further testing with immunohistochemical stains was recommended to support the diagnosis of liposarcoma, however was not done because of the patient's untimely death.

Although resection remains the main modality of treatment, surgical intervention for intra-abdominal liposarcoma is difficult due to its location and an inability to identify a clear margin as local recurrence will largely depend on the margin status. In terms of radiation therapy, although it is commonly used together with surgery, it has no level one evidence for the specific management of retroperitoneal sarcomas, likewise, the role of chemotherapy is not well defined.⁵ Local recurrences are oftentimes managed in a palliative manner and the role of resection for metastatic disease is not yet clear.

The overall five year survival of patients with high grade liposarcoma is less than 50%. As stated, primary malignant neoplasm of the peritoneal region is relatively rare and carries a poor prognosis despite surgical resection. A clinicopathological study done by Huang, H. et al., showed an extremely aggressive post metastatic course of metastatic retroperitoneal dedifferentiated liposarcoma with a median post metastatic survival of only five months.³ In this case, a period of five months was noted from the patient's initial presentation of pleural effusion to patient's death.

Conclusion

Dedifferentiated liposarcoma is a rare devastating disease that usually occurs in adult males. This paper reports an unusual patient profile of a young female diagnosed with an undifferentiated malignancy of unknown origin, probably liposarcoma masquerading as tuberculosis that resulted in death. Due to its rarity, management of these tumors requires a multidisciplinary team approach.

References

1. **Longo, Dan, et.al.** Harrison's Principles of Internal Medicine 18th edition; New York : McGraw-Hill, 2012. Print.
2. **Schwartz,Robert,et.al.(2015,May28).** Liposarcoma Treatment &Management. Retrieved from <http://emedicine.medscape.com/article/1102007>.
3. **Grifasi C, Calogero A, Carlomagno N, Campione S, ArmientoF and Renda A.** Intraperitoneal dedifferentiated liposarcoma showing Mdm2 amplification:case report. World Journal of Surgical Oncology,11:305 doi:10.1186/1477-7819-11-305. 2013
4. **Mulljnx J, Zager J, Gonzalez R.** Current Diagnosis and Management of Retroperitoneal Sarcoma. Cancer Control. 18(3):177-187. 2011
5. **Huang, H, Brenman M, Singer S, Antonescu C.** Distant metastasis in the retroperitoneal dedifferentiated liposarcoma is rare and rapidly fatal: A Clinicopathological study with emphasis on the low grade Myxofibrosarcoma-like pattern as an early sign of differentiation. Modern Pathology, 18, 976-984. doi:10.1038/modpathol.3800381. 2005
6. **Gebhart, Mark and Buecker, Peter.** Liposarcoma: A detailed Review. Liddy Shriver Sarcoma Initiative sarcomahelp. Org /liposarcoma.html. 2012