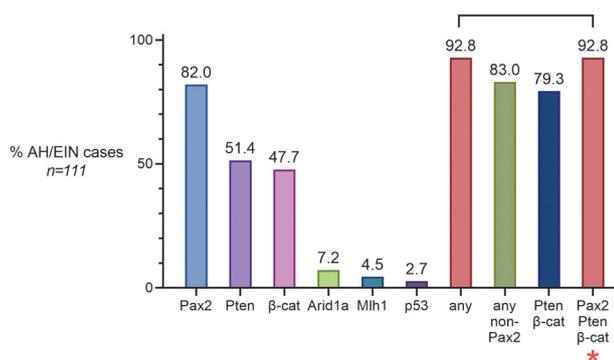


Abstract 496 Figure 1



Abstract 496 Figure 2

patients were analyzed by immunohistochemistry for 6 markers: Pax2, Pten, Mlh1, b-catenin, Arid1a, and p53. Aberrant expression consistent with an underlying molecular defect was tabulated for each case and marker. An additional set of n=79 normal endometria was also analyzed to define optimal criteria for marker aberrance. The performance characteristics of each marker, the entire panel, and subsets thereof were statistically analyzed.

**Result(s)\*** In order of number of cases detected, the most frequently aberrant markers in AH/EIN were Pax2 (82.0% of cases), Pten (51.4%), b-catenin (47.7%), Arid1a (7.2%), Mlh1 (4.5%), and p53 (2.7%). The great majority of cases showed aberrant expression of  $\geq 2$  markers. The 6 markers together identified 92.8% of cases. Arid1a and Mlh1 proved to be robust and readily-scored markers, but all cases showing aberrant expression of either of these two markers was also detected by b-catenin, Pax2, or Pten.

**Conclusion\*** A limited panel of only 3 markers (Pax2, Pten, and b-catenin) showed optimal performance characteristics as a

diagnostic adjunct in the histopathologic diagnosis of AH/EIN. Use of this panel was practicable and robust, with at least one of the 3 markers being aberrant in 92.8% of AH/EIN.

## 672 A CASE REPORT OF BENIGN METASTASIZING LEIOMYOMA

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**Introduction/Background\*** Benign metastasizing leiomyoma (BML) is a rare benign condition involving the extra-uterine spread of smooth muscle cells with histological, immunological, and molecular patterns similar to those of benign uterine leiomyomas. Due to the uncommon nature of the disease, diagnosis and treatment is very challenging. There are no current standardized guidelines for treatment of BML but usually treated with a combination of surgical resection and radiotherapy, followed by hormonal treatment and monitored through radiography.

**Methodology** This is a case of a 49 year old G0 with an incidental finding of BML in the lungs. Routine pre-employment chest x-ray revealed pulmonary nodules. Computed tomography (CT) scan of the abdomen revealed uterine leiomyoma. Video-assisted thoracic surgery (VATS) with wide resection of pulmonary nodules and frozen section was done. Histopathology revealed BML. Immunostains for p53, Ki-67 and p16 were negative, while immunostain for estrogen and progesterone receptor (ER/PR) were positive. Serial chest radiography monitoring showed no significant interval change in pulmonary nodules and patient remained asymptomatic. Few years later, the patient presented an enlarged abdomen. Transvaginal ultrasound revealed a pedunculated subserous myoma. The patient underwent exploratory laparotomy, extrafascial hysterectomy with bilateral salpingo-oophorectomy. Histopathology revealed BML.

**Result(s)\*** Currently, patient has been asymptomatic for 6 years with no interval changes in pulmonary nodules size despite having multiple lesions in both lungs.

**Conclusion\*** BML is a monoclonal benign tumor with high metastatic potential. A hormone dependent, which growth depends primarily on estrogen and progesterone. This can metastasize to distant organs commonly in the lung (PBML), hence, confused with leiomyosarcoma. Uterine surgeries such as curettage, hysteromyomectomy and hysterectomy can cause it to spread hematogenously to the lung through venous circulation. Patients are usually asymptomatic at presentation and lesions are only incidentally discovered during routine physical examinations as multiple pulmonary nodules in chest radiography. Thoracoscopic lung biopsy remains the gold standard in the diagnosis for PBML. The most helpful pathologic features that characterize PBML and other BMLs are their low cellularity and mitotic index, and the absence of nuclear atypia and tumor necrosis. Immunohistochemistry staining usually is positive for Desmin, Smooth Muscle Actin (SMA) and ER/PR.

# A Case Report of Benign Metastasizing Leiomyoma (BML)

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## ABSTRACT

### INTRODUCTION

Benign metastasizing leiomyoma (BML) is a rare benign condition involving the extra-uterine spread of smooth muscle cells with histological, immunological, and molecular patterns similar to those of benign uterine leiomyomas. Due to the uncommon nature of the disease, diagnosis and treatment is very challenging. There are no current standardized guidelines for treatment of BML but is usually treated with a combination of surgical resection and radiotherapy, followed by hormonal treatment and monitored through radiography.

### CASE

This is a case of a 49 year old G0 with an incidental finding of BML in the lungs 10 years post myomectomy. Routine pre-employment chest x-ray revealed pulmonary nodules. Computed tomography (CT) scan of the abdomen revealed uterine leiomyoma. Video-assisted thoracic surgery (VATS) with wide resection of pulmonary nodules and frozen section was done. Histopathology revealed BML. Immunostains for p53, Ki-67 and p16 were negative, while the immunostain for estrogen and progesterone receptor (ER/PR) was positive. Serial chest radiography monitoring showed no significant interval change in pulmonary nodules and patient remained asymptomatic. Few years later, the patient presented with an enlarging abdomen. Transvaginal ultrasound revealed a pedunculated subserous myoma. The patient underwent exploratory laparotomy, extrafascial hysterectomy with bilateral salpingo-oophorectomy. Histopathology revealed BML. Patient has been asymptomatic for 6 years despite having multiple lesions in both lung.

### CONCLUSION

Based on the patient's history, physical examination, and results of the different workups done, we can conclude that the previous uterine surgery done caused the hematogenous spread of the BML and dissemination to the lung through the venous circulation. Since uterine myoma is a hormonal dependent tumor and patient is not yet menopausal, the pulmonary nodules increased in size and number, hence the team decided to do surgical induced menopause as therapeutic management for the patient.

## DISCUSSION

BML is thought as a monoclonal benign tumor with a high metastatic potential. It is hormone dependent, and its growth depends primarily on estrogen and progesterone. This can metastasize to distant organs most commonly in the lung (PBML), hence being confused with leiomyosarcoma. Uterine surgeries such as curettage, hysteromyomectomy and hysterectomy can cause it to spread hematogenously and disseminate to the lung through the venous circulation. Patients are usually asymptomatic at presentation and lesions are only incidentally discovered during routine physical examinations as multiple pulmonary nodules in chest radiography. Thoracoscopic lung biopsy remains the gold standard in the diagnosis for PBML. The most helpful pathologic features that characterize PBML and other BMLs are their low cellularity and mitotic index, and the absence of nuclear atypia and tumor necrosis. Immunohistochemistry staining usually is positive for Desmin, Smooth Muscle Actin (SMA), estrogen receptor (ER) and progesterone receptor (PR).



Figure 1,2,3 Showed Periodic Progression Of Pulmonary Nodules From 2006-2014

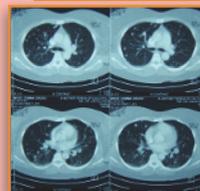


Fig. 4 Chest CT scan multiple varied size nodules on both lungs



Fig. 5 Multiple discrete, whitish pulmonary nodules 3-16mm size diffusely scattered in both upper and lower lobes

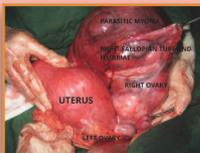


Fig. 6: Gross Specimen Parasitic Myoma Is Seen Attached To The Right Broad Ligament.

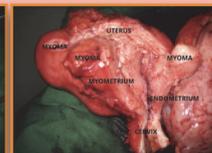


Fig. 7: Uterus; Serosa Is Tan, Smooth; Myometrium Measured 6cm; Endometrium Measured 0.4cm; Multiple Myoma Uteri Both Intramural And Subserous With Largest Measuring 10x8x7cm; Cervix Measured 10x8x7cm

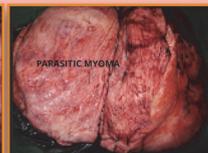


Fig. 8: Parasitic Myoma (Tan, Solid Mass With Pinkish Tan Fleshy Cut Surfaces) 25x21x19cm

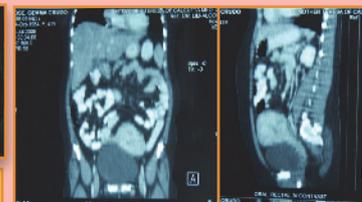


Fig. 9 CT scan of the abdomen showed enhancing density in the uterus consider leiomyoma



FIG 10: Ki67 IMMUNOSTAIN

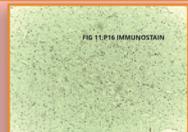


FIG 11: P16 IMMUNOSTAIN

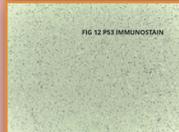


FIG 12: ER IMMUNOSTAIN



FIG 13: PROGESTERONE RECEPTOR IMMUNOSTAIN

Fig 10,11,12 Are Negative Immunostain Results Of The Specimen Taken From The Myoma Fig 13 Showed Positive Result Brown Cells Possess Progesterone Receptor

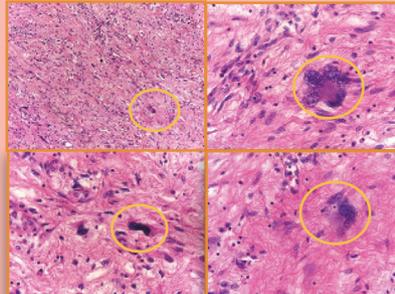


Fig 14: Atypical Leiomyoma Is Characterized By The Presence Of Multinucleated Cells With Nuclear Enlargement, Pleomorphic Nuclei And Hyperchromatic Stain

### References

- Chen, S., Liu, R. M., & Li, T. (2014). Pulmonary benign metastasizing leiomyoma: a case report and literature review. *Journal of thoracic disease*, 6(5), E52-E58. <https://doi.org/10.3978/j.issn.2072-1439.2014.04.37>
- Benign Metastasizing Uterine Leiomyoma: Case Report with Review of the Literature. *Watanai, Etsuo, et al 2020.*
- Benign metastasizing leiomyoma presenting with milary pattern and fatal outcome: Case report with molecular analysis & review of the literature. *Kerneth Chori, et al 2019.*
- Benign Metastasizing Leiomyoma to the Lung and Spine: A Case Report and Literature Review. *Sarber, El et al 2019.*
- A rare case of benign metastasizing leiomyoma. *Kozma Ruzsot et al 2017.*
- Benign Metastasizing Leiomyoma of the Uterus: Rare Manifestation of a Frequent Pathology. *Maria Inês Raposo 2016.*
- Multisystemic Benign Metastasizing Leiomyoma: An Unusual Condition with an Atypical Clinical Presentation. *Fernando Manso 2019.*
- Pokrasa Taher, Sandra Soares, Jang Wang, Raab Shipley, Tarek Nemati, Rana Khalid, Nagla Abdel-Khalim. Benign Metastasizing Leiomyoma: A Rare Type of Lung Metastases—Two Case Reports and Review of the Literature. *Cases Reports in Oncological Medicine*, vol. 2014, Article ID 942601, 4 pages.