

More than Meets the Eye: A Case Report on Ocular Melanoma

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Epidemiology

- Most common type of eye cancer
- Two different forms: uveal or conjunctival
- Uveal form typically is asymptomatic and usually discovered as an incidental finding on eye exams

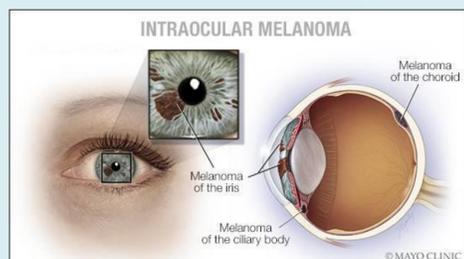


Figure 4. Intraocular Melanoma⁶

- Diagnosis can be made through various non-invasive techniques, including fundoscopic exam, ultrasound, optical CT and fluorescein angiography
- Risk factors** include fair skin and light eye color (blue or gray irises), UV light exposure, and existence of cutaneous nevi

Surveillance

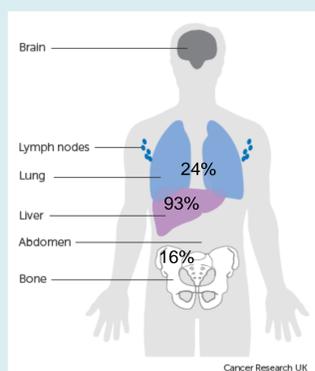


Figure 5. Most Frequent sites of Metastasis²

- While a small amount of patients have metastatic disease at the time of diagnosis, appearance of metastasis may be delayed for a long time, therefore, long term-surveillance is recommended.
- Metastasis occurs through **hematogenous spread**.
- Due to the overwhelming majority of metastasis being in the liver, surveillance usually focuses on the liver, with abdominal CT, MRI, and ultrasound
- Local treatment is effective in up to 95% of cases, however, up to 50% of them have risk for metastatic disease.

Case

A 90 year-old white female was admitted on April 15, 2019 for a ground level fall with cranial trauma. Initial evaluation was negative for acute intracranial bleed, fractures, acute infections, or electrolyte abnormalities. She was admitted for closer monitoring to rule out cardiogenic etiologies for her fall.

The patient lived in an assisted living facility and had been deconditioning for a few months, with notable 20 pound, unintentional weight loss.

Significant past medical history included:

- Dyslipidemia
- Stage 0 chronic lymphocytic leukemia (p53 deletion) diagnosed in 2003, being managed by hematology/oncology
- Ductal carcinoma of the right breast (ER/PR positive, HER2/neu negative, s/p lumpectomy with SLN biopsy in January 2016), for which patient declined anti-estrogen therapy
- Ocular melanoma s/p right eye enucleation in May 2010. She had a prosthetic right eye.



Figure 1. PET Scan April 9, 2019

The patient had been following with her oncologist who, prior to the patient's admission, had been concerned about progression of her CLL given her deconditioning and weight loss. An abdominal CT scan ordered in November 2018, revealed an ill-defined liver lesion, which had grown and become more defined on her repeat CT scan in March 2019. At an appointment in early April 2019, her oncologist ordered a PET scan, which showed a mass in the left lobe of the liver, as well as several granulomatous lung lesions.

References

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The liver mass was suspicious for metastasis, as the patient had multiple cancers that commonly metastasized to the liver. A new malignancy, however, or other etiology, such as hepatic adenoma, could not be ruled out given the patient's history of multiple primary cancers. Hematology/oncology was consulted in the hospital and, after extensive discussion with the family, decision to undergo liver biopsy by interventional radiology was made. On day four of admission, patient had an image-guided liver biopsy, which returned positive for metastatic melanoma.

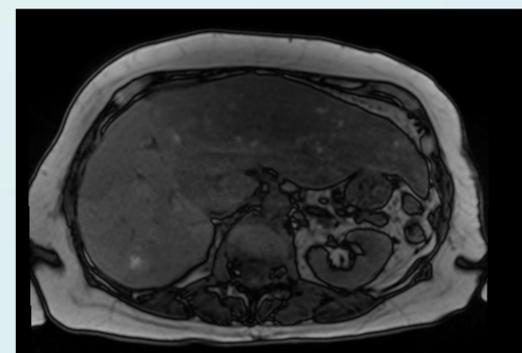


Figure 2. Abdominal MRI with Large Heterogeneous Mass Replacing Entire Left Hepatic Lobe

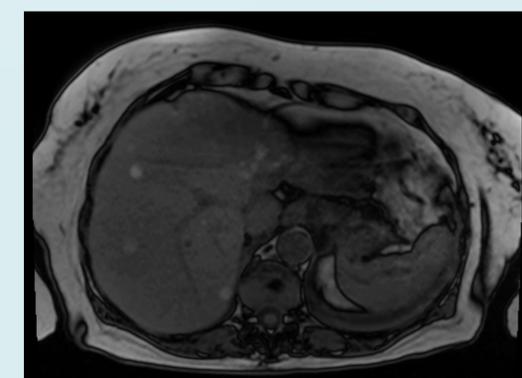


Figure 3. Abdominal MRI with Multiple Metastatic Nodules Scattered through Right Hepatic Lobe

Upon discussion of the results and prognosis, the patient and family decided on discontinuing cancer therapy, opting to move forward with acute rehabilitation in attempts to improve physical strength, followed by return to her assisted living facility with hospice. Patient expired one month after her admission date.

Treatment

Table 1. Pattern of recurrence after hepatic resection for melanoma metastasis⁷

Anatomical site involved in recurrence	Primary ocular	Primary cutaneous	Total
Liver	8	4	12
Brain	1	5	6
Dermal metastasis/soft tissue	0	6	6
Distant lymph nodes	1	4	5
Lungs	3	5	8
Bone	1	1	2
Adrenal gland	1	1	2
Viscera	0	2	2
Total intrahepatic recurrences	8	4	12
Total extrahepatic recurrences	7	24*	31

*P = .015, extrahepatic recurrences: ocular primary versus cutaneous primary melanoma.

- Until the 1970s, removal of the eye through enucleation surgery was the only option for many patients
- Modern treatment involves targeted high-dose radiation therapy, with enucleation reserved for patients with high risk of metastasis or who would not tolerate radiation therapy (i.e. large tumor, retinal detachment, poor visual potential)
- Other non-invasive treatment options or local tumor resection also are available for certain patients.
- Many new treatments and targeted therapies are being developed and enhanced, with various clinical trials open for patient enrollment.

Take Home Points

- Despite adequate treatment, roughly 50% of ocular melanoma cases will metastasize, requiring appropriate follow-up and screening
- Most common site of metastasis is the liver.
- A dilated eye exam is the best way to screen for ocular melanoma. The American Academy of Ophthalmology recommends an annual dilated eye exam starting at age 40.
- Prevention of ocular melanoma involves reducing your risk, specifically limiting UV-light exposure. Wear sunglasses that block 100% of UV light whenever outdoors.

Ocular melanoma may not be noticeable in early stages and is most often detected during a dilated eye exam.

Make sure this exam is part of your annual wellness routine.

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