



Clinical case

Late-onset liver metastases from melanoma: two case reports and review of the literature

Métastases hépatiques tardives de mélanome : à propos de deux cas et revue de la littérature

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Résumé

Le mélanome malin est la forme la plus agressive de cancer de la peau, en raison de son fort potentiel métastatique et de la possibilité de récurrences tardives, survenant parfois de nombreuses années après le traitement de la tumeur primitive. Ces métastases tardives sont souvent initialement asymptomatiques et peuvent se manifester par des signes cliniques non spécifiques, ce qui pose un problème diagnostique majeur. Parmi les sites viscéraux, l'atteinte hépatique est particulièrement importante en raison de sa gravité et de son impact pronostique. Nous rapportons deux cas de patientes ayant présenté une douleur de l'hypochondre droit, chez qui l'imagerie a révélé de multiples lésions hépatiques, et dont la biopsie hépatique a confirmé un mélanome métastatique concordant avec leurs tumeurs cutanées et choroïdienne initiales. Ces cas illustrent le phénomène des métastases hépatiques d'apparition

tardive, soulignent le rôle de l'IRM dans la détection des lésions contenant de la mélanine, et mettent en évidence d'importants pièges diagnostiques ainsi que les implications cliniques pour le suivi à long terme.
Mots clés: malignant melanoma, late metastases, liver metastases, MRI.

Abstract

Malignant melanoma is the most aggressive form of skin cancer, due to its high metastatic potential and the possibility of late recurrences, sometimes occurring many years after treatment of the primary tumor. These late metastases are often initially asymptomatic and may present with non-specific clinical features, posing a significant diagnostic challenge. Among visceral sites, hepatic involvement is particularly important because of its severity and prognostic impact. We report two cases of female patients presenting with right upper quadrant pain, in

whom imaging revealed multiple liver lesions, and in whom liver biopsy confirmed metastatic melanoma consistent with their initial cutaneous and choroidal tumors. These cases illustrate the phenomenon of late-onset liver metastases, underscore the role of MRI in detecting melanin-containing lesions, and highlight important diagnostic pitfalls and clinical implications for long-term follow-up.

Keywords: malignant melanoma, late metastases, liver metastases, MRI.

Introduction

Malignant melanoma is the most aggressive form of skin cancer, due to its high metastatic potential and the possibility of late recurrences, sometimes occurring many years after treatment of the primary tumor. These late metastases are often initially asymptomatic and may present with non-specific clinical features, posing a significant diagnostic challenge. Among visceral sites, hepatic involvement is particularly important because of its severity and prognostic impact.

Clinical cases

Case n°1

The first case is a 55-year-old female who was admitted with pain in the right hypochondrium. She had a history of cutaneous melanoma of the peri-lachrymal region, which had been surgically treated 14 years earlier. No additional information regarding the initial stage or adjuvant management was available, and she had been considered disease-free since that time.

On current presentation, abdominal ultrasound revealed several hypoechoic liver lesions that were challenging to characterize, as well as a right subcapsular collection. To better characterize these findings, magnetic resonance imaging (MRI) of the liver was performed. MRI demonstrated multiple hepatic lesions exhibiting high signal intensity on T1-weighted sequences and predominantly low signal

intensity on T2-weighted sequences, with central hyperintensity in some lesions, and enhancement after contrast administration, suggestive of metastatic melanoma (Figure 1).

A percutaneous ultrasound-guided liver biopsy was performed. Histopathological examination revealed a malignant proliferation of epithelioid cells with prominent nucleoli and intracytoplasmic brown pigment consistent with melanin, confirming the diagnosis of metastatic melanoma compatible with the patient's previous cutaneous primary.

Case n°2

The second case is a 40-year-old female with a history of choroidal melanoma treated 10 years earlier. She had undergone local treatment of the ocular lesion (details of the initial staging and exact therapeutic modality were not available in the record), with no known evidence of metastatic disease during the subsequent years.

She presented with marked abdominal pain in the right hypochondrium and abnormal liver function tests. Initial abdominal ultrasound revealed infiltrative hepatic lesions that were difficult to delineate, with a heterogeneous echotexture. A contrast-enhanced CT scan was then performed, demonstrating diffuse, infiltrative low-density lesions throughout the liver with mild enhancement after contrast administration (Figure 2), raising suspicion of extensive metastatic disease.

A percutaneous ultrasound-guided liver biopsy was performed. Histology showed sheets of atypical melanocytic cells with nuclear pleomorphism and occasional intracytoplasmic melanin pigment, confirming metastatic melanoma consistent with the prior choroidal primary.

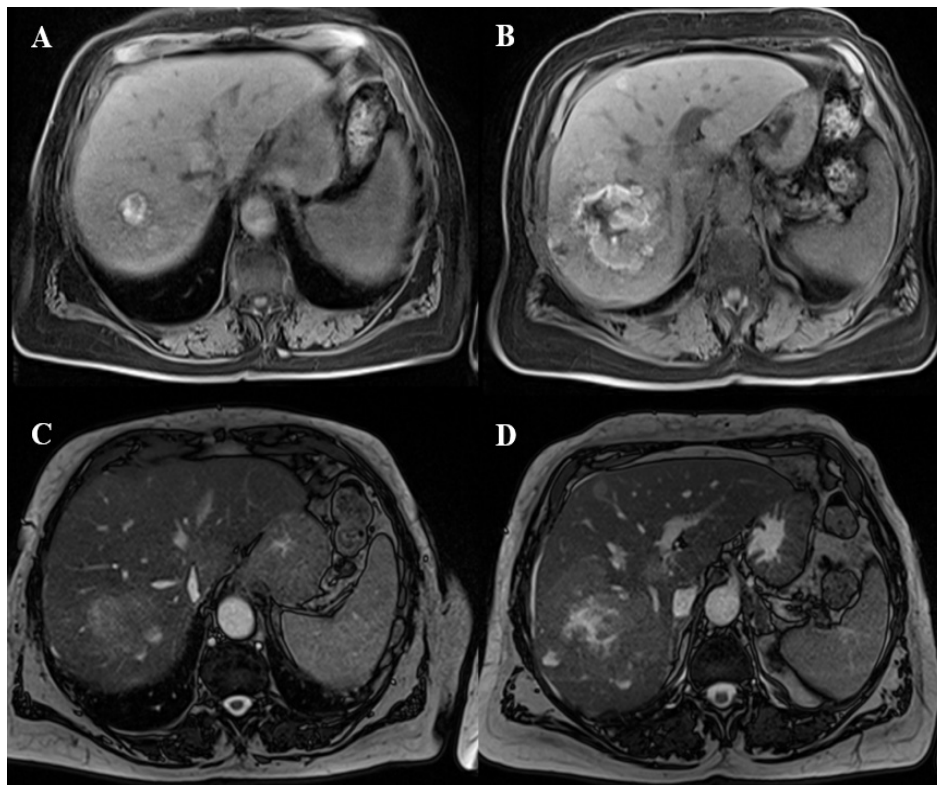


Figure 1: Hepatic lesions with high signal intensity on T1-weighted sequences (A, B), with central hyperintensity on T2-weighted sequences (C, D), consistent with melanin-containing metastases.

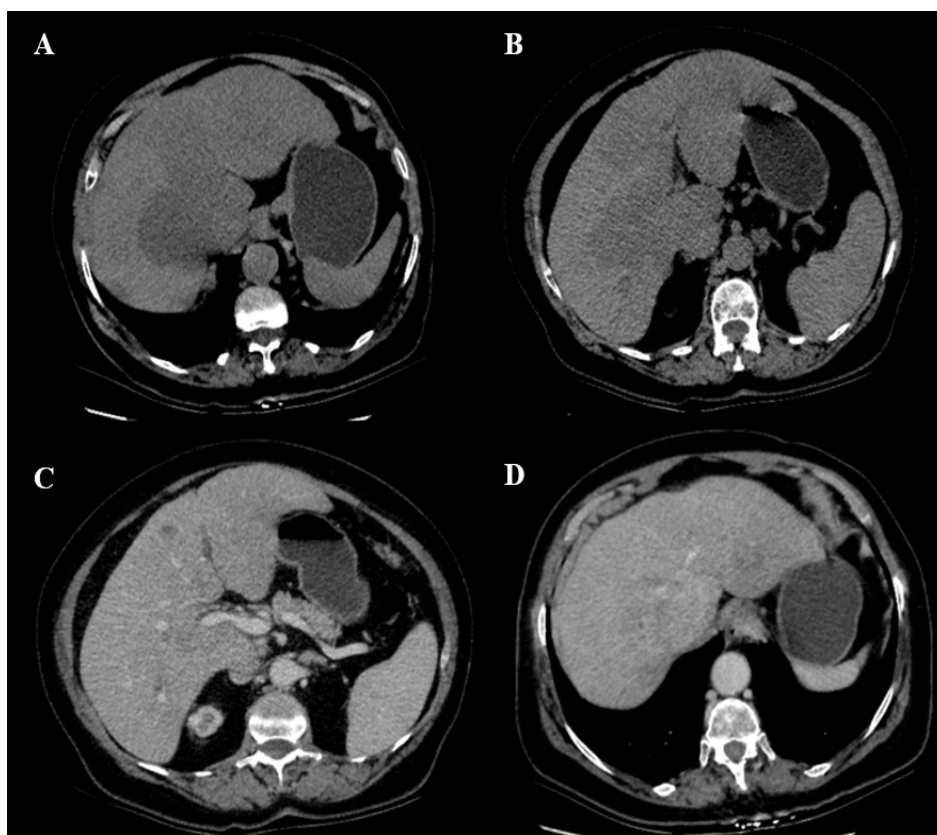


Figure 2: Contrast-enhanced abdominal CT scan showing low-density infiltrative liver lesions (A, B) with mild enhancement after contrast administration (C, D), compatible with diffuse metastatic involvement.

Discussion

Malignant melanoma is an extremely aggressive disease characterized by a strong tendency for metastatic dissemination. The liver is a common site of visceral metastases, particularly in advanced cutaneous melanoma and in uveal (choroidal) melanoma, in which hepatic involvement is often the dominant site. The median time to metastasis has been reported around 2–3 years (1), but late recurrences are well documented. Several series have described metastases appearing more than 10 years after the primary diagnosis, with some cases occurring as late as 20–25 years (2,3,10,13). Our two cases, with intervals of 10 and 14 years, thus fall into the category of late-onset or “late” hepatic metastases. The occurrence of metastases after a long disease-free interval is generally attributed to tumor dormancy. Melanoma cells can disseminate early and remain as limited residual disease, regulated over time by immune monitoring, angiogenic equilibrium, or a dormant cellular state (10,11). Age-related immunological senescence, alterations in the hepatic microenvironment, or other genetic or epigenetic factors may subsequently disturb this equilibrium and let dormant micro metastases to reactivate growth. The liver, characterized by its dual blood supply and distinctive immunological environment, is regarded as a permissive niche for dormant tumor cells, potentially elucidating the tendency for late hepatic recurrences in certain individuals, especially those with uveal melanoma (12,13). These observations prompt the inquiry regarding the duration of follow-up for melanoma patients. Current guidelines typically advocate for increased clinical and imaging surveillance during the initial 3–5 years, when the recurrence risk is at its peak, followed by a reduction in frequency thereafter (14). Nonetheless, the potential for late visceral metastases, especially in high-risk populations, indicates that clinicians must maintain prolonged surveillance (10,12–14). A prior history of melanoma (cutaneous or choroidal) should consistently be investigated when evaluating new

hepatic lesions, even after several decades (10,12,13). In patients with established risk factors (such as thick primary lesions, uveal origin, or prior high tumor burden when required), prolonged clinical follow-up and a reduced threshold for imaging may be warranted, particularly if liver-related symptoms or abnormal liver tests occur (12–14). Our data demonstrate that, in symptomatic individuals with a remote history of melanoma, metastatic disease is a significant diagnostic concern. The text delineates the distinctions and similarities between cutaneous and choroidal melanoma: cutaneous melanoma predominantly metastasizes to regional lymph nodes, lung, skin, and soft tissue, with hepatic involvement being prevalent in advanced stages, while choroidal melanoma exhibits a pronounced affinity for the liver, with hepatic metastases manifesting in the majority of patients experiencing systemic dissemination, frequently serving as the initial or primary site. The timeframe for hepatic metastasis varies, with choroidal melanoma recognized for late hepatic recurrences, occasionally occurring over a decade post-ocular therapy, while cutaneous melanoma generally recurs sooner, but late occurrences are not uncommon (10,12,13). Melanoma cells can disseminate early and remain as limited residual disease, regulated over time by immune monitoring, angiogenic equilibrium, or a dormant cellular state (10,11). Age-related immunological senescence, alterations in the hepatic microenvironment, or other genetic or epigenetic factors may subsequently disturb this equilibrium and let dormant micrometastases to reactivate growth. The liver, characterized by its dual blood supply and distinctive immunological environment, is regarded as a permissive niche for dormant tumor cells, potentially elucidating the tendency for late hepatic recurrences in certain individuals, especially those with uveal melanoma (12,13). These observations prompt the inquiry regarding the duration of follow-up for melanoma patients. Current guidelines typically advocate for increased clinical and imaging surveillance during the initial 3–5 years, when the recurrence risk is at its peak, followed by a reduction

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soft-tissue contrast and functional information (4,5,6). The paramagnetic properties of melanin typically result in high signal intensity on T1-weighted images and low signal on T2-weighted images (7), as in our first case, where this classic pattern, combined with contrast enhancement, strongly suggested metastatic melanoma and guided the diagnostic work-up. When present, this T1 hyperintensity can be a useful imaging clue, but appearances are variable and several pitfalls must be considered: melanoma metastases may undergo cystic degeneration or necrosis, mimicking benign cysts or cystic neoplasms (8); they may infiltrate the liver diffusely or present as innumerable small nodules (miliary pattern), which can be difficult to distinguish from other diffuse infiltrative diseases (9); and they may show arterial phase hyperenhancement and washout, mimicking hypervascular primary liver tumors such as hepatocellular carcinoma, while T1 hyperintensity may also result from hemorrhage or fat rather than melanin (6,9). In this context, MRI should be considered the preferred modality for further characterization of suspicious hepatic lesions in patients with a history of melanoma, especially when CT findings are equivocal, and correlation with clinical history, including remote melanoma, and histological confirmation by biopsy remain essential for accurate diagnosis. Finally, hepatic melanoma is overwhelmingly metastatic, whereas primary hepatic melanoma is exceedingly rare, with only isolated cases reported (7). Distinguishing primary from metastatic lesions relies on clinical evaluation, thorough search for an extrahepatic primary site, and histopathological correlation; in our patients, the presence of well-documented prior cutaneous and choroidal melanomas, together with compatible histology, clearly supported the diagnosis of metastatic disease.

Conclusion

These two instances of late-onset hepatic melanoma metastases exemplify the diverse imaging characteristics, ranging from multiple T1-

hyperintense nodules to extensive infiltrative liver involvement, and emphasize the notion of tumor dormancy, with metastases arising many years post apparent resolution of the primary tumor. MRI, due to its heightened sensitivity to melanin and exceptional soft-tissue contrast, is pivotal in the diagnosis and characterization of such lesions and should be favored when CT findings are equivocal.

Clinicians and radiologists must uphold an extensive differential diagnosis while assessing hepatic lesions, methodically contemplating metastatic melanoma in each patient with a present or past history of cutaneous or choroidal melanoma. Recognition of this potentiality has significant implications for the length of follow-up, the analysis of imaging investigations, and the prompt onset of suitable oncological treatment.

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References

[1] Meier F, Will S, Ellwanger U, Schlagenhaufl B, Schitteck B, Rassner G, Garbe C. Metastatic pathways and time courses in the orderly progression of cutaneous melanoma. *Br J Dermatol.* 2002;147(1):62-70. doi:10.1046/

j.1365-2133.2002.04867.x

[2] Orlando R, Lumachi F. Late liver metastases of choroidal melanoma detected by laparoscopy. *In Vivo.* 2008;22(6):807-809.

[3] Gündüz K, Shields JA, Shields CL, Sato T, Mastrangelo MJ. Surgical removal of solitary hepatic metastasis from choroidal melanoma. *Am J Ophthalmol.* 1998;125(3):407-409. doi:10.1016/S0002-9394(99)80188-0

[4] Sofue K, Tateishi U, Tsurusaki M, Arai Y, Yamazaki N, Sugimura K. MR imaging of hepatic metastasis in patients with malignant melanoma: evaluation of suspected lesions screened at contrast-enhanced CT. *Eur J Radiol.* 2012;81(4):714-718. doi:10.1016/j.ejrad.2011.01.123

[5] Premkumar A, Marincola F, Taubenberger J, Chow C, Venzon D, Schwartztruber D. Metastatic melanoma: correlation of MRI characteristics and histopathology. *J Magn Reson Imaging.* 1996;6(1):190-194. doi:10.1002/jmri.1880060134

[6] Ozaki K, Higuchi S, Kimura H, Gabata T. Liver metastases: correlation between imaging features and pathomolecular environments. *Radiographics.* 2022;42(7):1994-2013. doi:10.1148/rg.220056

[7] Ao W, Wang J, Mao G, Yang G, Han X, Jia Y, Cheng Y. Primary hepatic melanoma: a case report of computed tomography and magnetic resonance imaging findings. *Medicine (Baltimore).* 2019;98(25):e16165. doi:10.1097/MD.00000000000016165

[8] Shan GD, Xu GQ, Chen LH, Wang ZM, Jin EY, Hu FL, Li YM. Diffuse liver infiltration by melanoma of unknown primary origin: one case report and literature review. *Intern Med.* 2009;48(24):2093-2096. doi:10.2169/internalmedicine.48.2542

[9] So JK, Hong JY, Chung MW, Cho SB. A case of metastatic melanoma in the liver mimicking hepatocellular carcinoma. *J Liver Cancer.* 2021;21(1):92-96. doi:10.17998/jlc.21.1.92

[10] Crowley NJ, Seigler HF. Late recurrence of malignant melanoma: analysis of 168

patients. *Ann Surg.* 1990;212(2):173-177.
doi:10.1097/00000658-199008000-00011

- [11] Aguirre-Ghiso JA. Models, mechanisms and clinical evidence for cancer dormancy. *Nat Rev Cancer.* 2007;7(11):834-846. doi:10.1038/nrc2256
- [12] Rietschel P, Panageas KS, Hanlon C, Patel A, Abramson DH, Chapman PB. Variates of survival in metastatic uveal melanoma. *J Clin Oncol.* 2005;23(4):807-815. doi:10.1200/JCO.2005.04.101
- [13] Kujala E, Mäkitie T, Kivelä T. Very long-term prognosis of patients with malignant uveal melanoma. *Invest Ophthalmol Vis Sci.* 2003;44(11):4651-4659. doi:10.1167/iovs.03-0538
- [14] Dummer R, Hauschild A, Lindenblatt N, Pentheroudakis G, Keilholz U; ESMO Guidelines Committee. Cutaneous melanoma: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. *Ann Oncol.* 2015;26 Suppl 5:v126-v132. doi:10.1093/annonc/mdv297

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